

# ACTA ZOOLOGICA

## ACADEMIAE SCIENTIARUM HUNGARICAE

ADIUVANTIBUS

I. BOROS, L. GOZMÁNY, Z. KASZAB, L. MÓCZÁR,  
Á. SOÓS, G. SZELENYI

REDIGIT

J. BALOGH

TOMUS XXIV

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AKADÉMIAI KIADÓ, BUDAPEST

1978

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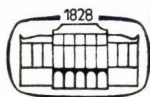
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## NEW ARCHEMORUS SPECIES (ARANEAE: ARGYOPIDAE)

By

P. BALOGH

(Received 15 May, 1977)

Based on the rich material of Hungarian soil zoological expeditions and on the collections of several museums abroad, a revision of the *Archemorus* species was made. Of the 8 known species 5 are wholly redescribed, and 10 new species described. Relying on new morphological features, a new key to species is also constructed.

Until now eight species of the genus *Archemorus* SIMON, 1893, was known, all having been described from Australia, New Guinea and the neighbouring islands

The present work was based partly on the New Guinean and New Caledonian materials of the Hungarian Natural History Museum, the Bishop P. Bernice Museum, Hawaii, and partly on the Australian collection of the Hungarian Natural History Museum. The latter collection was made, both in Australia, New Guinea and New Caledonia, by J. BALOGH, in 1965—1977, that of the Bishop Museum derives from various collectors.

The material proved to contain representatives of 14 *Archemorus* species, 10 of which proved to be new to science. One species was lent for study by the Natural History Museum, Vienna; the holotypes of two species, described in 1971, were obtained from the Natural History Museum, Leiden. My work extended to the examination of 15 *Archemorus* species. In the followings, I submit an identification key to the 15 species, constructed with respect to also new characteristics. The key concurrently serves also as differential diagnoses of the new species, followed by the detailed description of the 10 new species and the respective original drawings.

Zoogeographical and related evaluations will be given in later contributions.

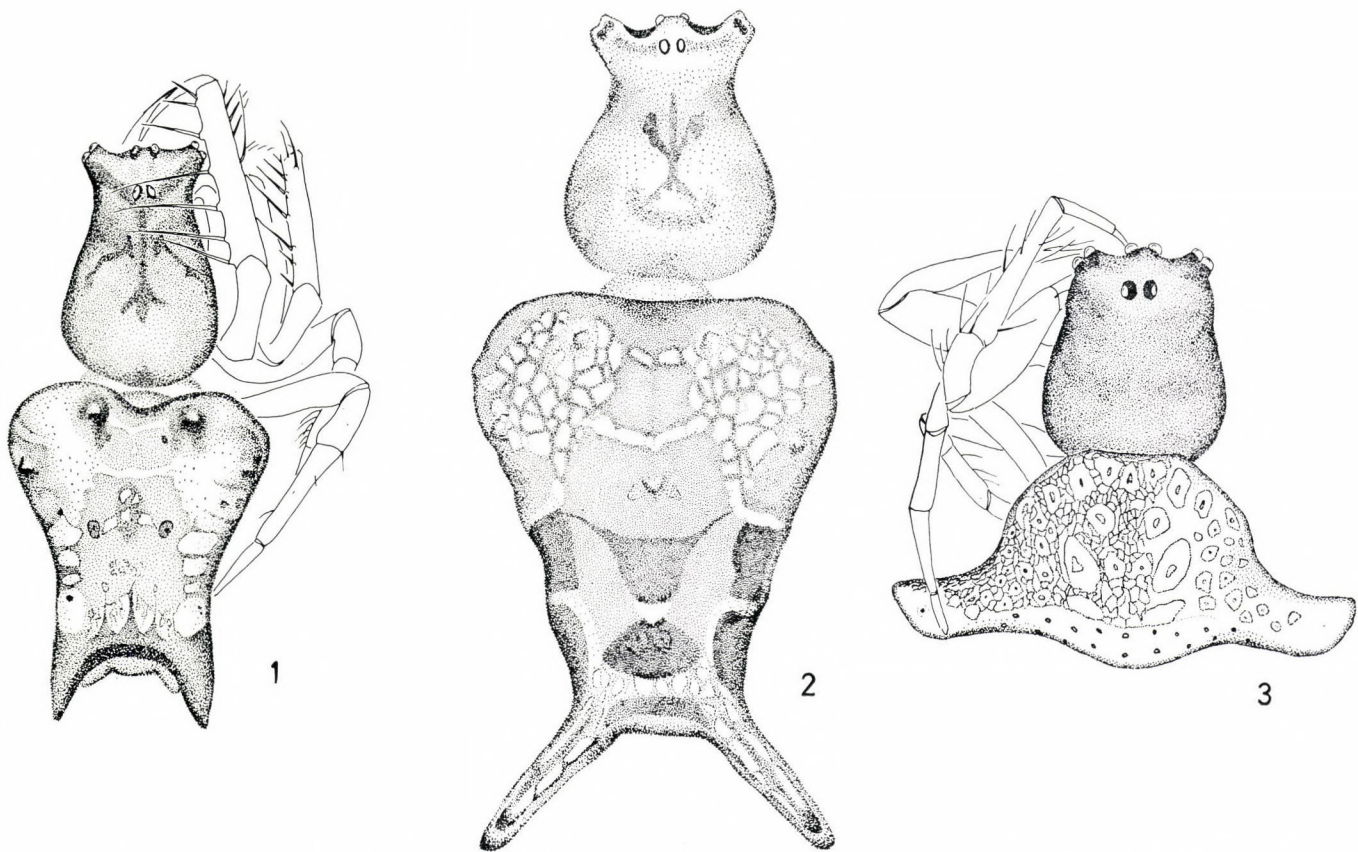
I am indebted to all institutions mentioned above for the kind loan of study material.

Concerning localities, the abbreviation BM refers to the Bishop P. Bernice Museum, Hawaii; every other material is preserved in the Balogh Collection, Hungarian Natural History Museum, Budapest.



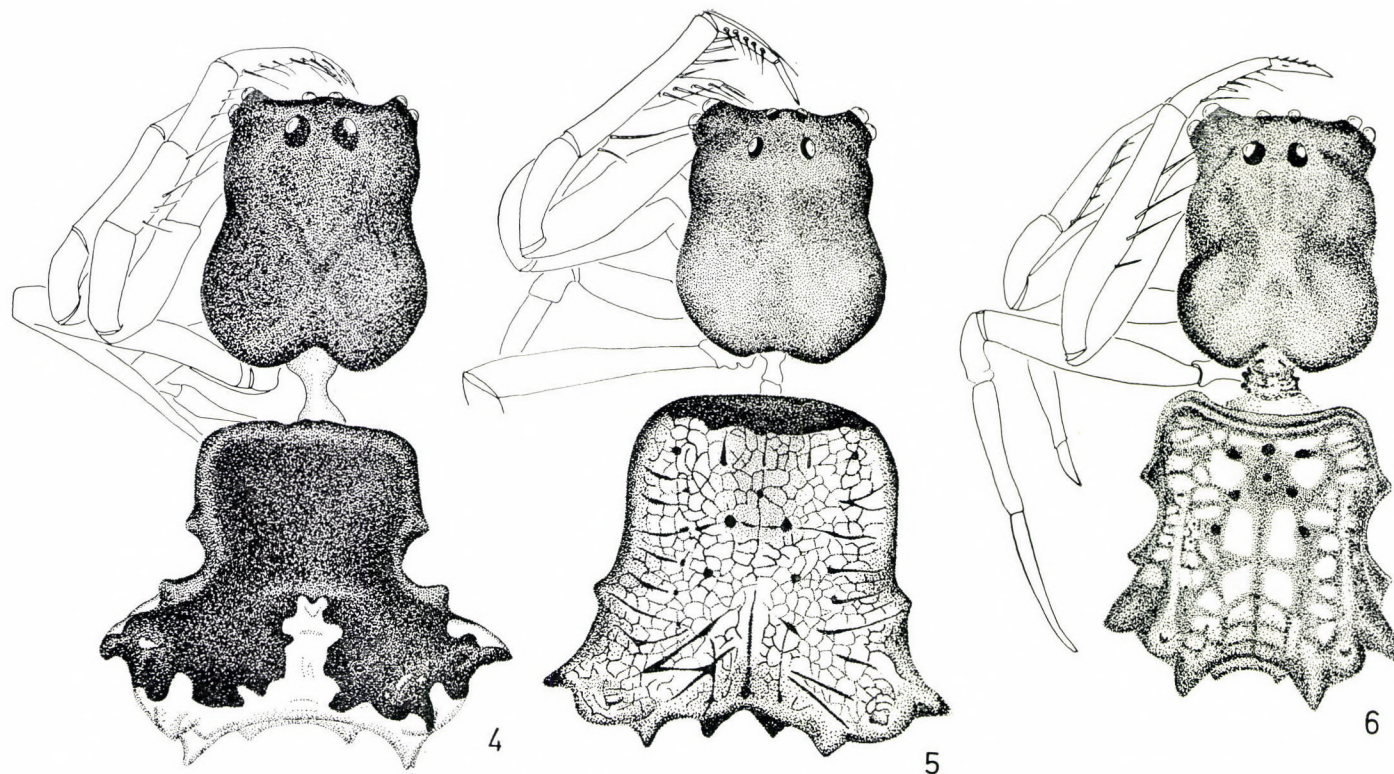
### Identification key to the *Archemorus* species

- 1 (4) Median eyes constituting a square.
- 2 (3) Lateral eyes situated on a common projection: posterior median eyes removed from each other at a distance not greater than diameter of an eye. Abdomen attenuating posteriorad, terminally furcate, considerably longer than wide. Tibia with 4—5 very long spines, each subtending nearly a right angle with tibia. — Queensland  
*furcatus* sp. n.
- 3 (2) Lateral eyes not situated on a projection: posterior median eyes removed from each other by a distance of at least 2—3 diameters of an eye. Abdomen widening posteriorad, terminally truncate, twice wider than long. Tibia at most with two long spines, these not subtending a right angle with tibia. — Sydney  
*transversus* sp. n.
- 4 (1) Median eyes constituting a trapezoid; posterior side always longer than anterior side.
- 5 (8) Posterior row of eyes straight or slightly recurved in a superior view; cephalothorax flat, cephalic portion almost as wide as thoracic portion. Cephalothorax connected with abdomen by a pedicel visible also from above. Anterior half of abdomen parallel-sided, posterior half widening. Spine 1 and 4 of tibia considerably shorter than spines, 2 and 3.
- 6 (7) Narrowest part of abdomen in its anterior section, its posterior widest part at most one and a half times as wide as its narrowest anterior part. Spine 1 of tibia essentially shorter than half length of spine 2. Basis of epigyne without a large, anchor-shaped plate, its median part divided. — Queensland, in rain forests  
*dilatatus* sp. n.
- 7 (6) Narrowest part of abdomen anterior to its half length, there pandurately constricted, its widest part posteriorly more than twice wider than at its narrowest section. Spine 1 of tibia about as long as half length of spine 2. Basis of epigyne with a large, anchor-shaped transverse plate, medially undivided. — New Caledonia and Loyalty Islands, in wet forests  
*vicarius* sp. n.
- 8 (5) Posterior row of eyes always procurved in the superior view; cephalothorax vaulted, or if flatter, then attenuating anteriorad, narrower than thoracic portion. Cephalothorax and abdomen not connected by a pedicel visible also from above. Abdomen posteriorad either attenuating or wider than long.
- 9 (16) Abdomen always wider than long, not attenuating posteriorad, parallel- or nearly parallel-sided. Posterior row of eyes strongly procurved: posterior median eyes near half length of cephalothorax.
- 10 (13) Abdomen one and a half times to twice as wide as long, its widest section at its middle length or even beyond it. Tibia I long: at least five times longer than wide.
- 11 (12) Sigilli well visible; cephalothorax considerably widening behind posterior median eyes. Quadrangle of median eyes only slightly longer than wide. Bristles of tibia I shorter: apex of first long hair not reaching base of hair beyond second long hair. Median part of epigyne anteriorly open. — Buru Island  
*occidentalis* REIMOSER, 1936
- 12 (11) Borders of sigilli mostly not or hardly visible; cephalothorax only slightly widening behind posterior median eyes. Quadrangle of median eyes essentially longer than wide. Bristles of tibia I longer: apex of first long hair projecting beyond base of hair following second long hair. Epigyne a cordiform plate, closed anteriorly. — In New Guinea and the Solomon Islands  
*roosdorpi* CHRYSANTHUS, 1971
- 13 (10) Abdomen only slightly (at most one and a half times) wider than long, its widest section anterior to its half length. Tibia I short, widening, at most two and a half times to thrice as long as wide.
- 14 (15) Posterior median eyes situated much posteriorad in a superior view, at half length of cephalothorax; behind posterior median eyes no 4 well visible chitinous tubercles present. Tibia I two and a half times as long as wide, at least with 12 bristles (disregarding the very short intermediate hairlets). Between long bristles 3 and 4 of tarsus I also 3 minute intermediate hairlets present, their length increasing exteriorad. — New Guinea, sporadically  
*sibil* CHRYSANTHUS, 1971
- 15 (14) Posterior median eyes situated in a superior view anterior to half length of cephalothorax; 2 pairs of well visible chitinous tubercles present behind posterior median eyes. Tibia I twice longer than wide, at most with 8 bristles; bristle 1 originating far from base of tibia, almost at its half length. Between long bristles 3 and 4 of tarsus I merely one minute intermediate hairlet present. — Queensland, in rain forests  
*tuberculatus* sp. n.



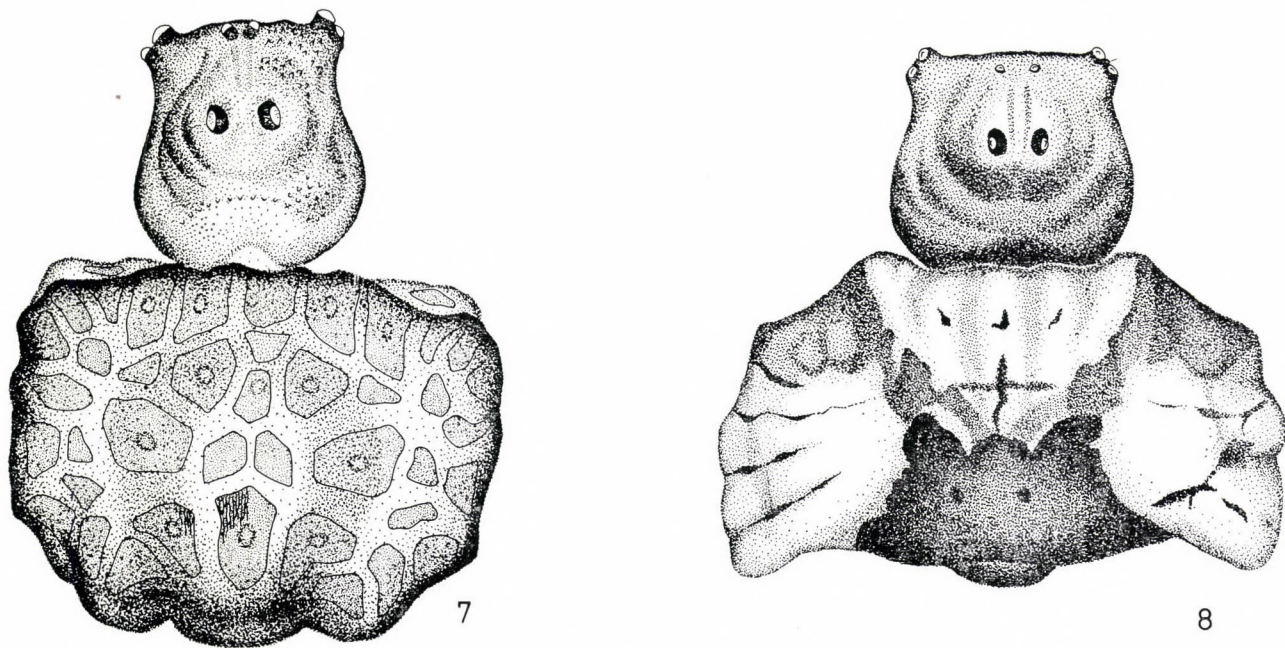
Figs. 1–3. 1 = *Archemorus furcatus* sp. n., male; 2 = *A. furcatus* sp. n., female; 3 = *A. transversus* sp. n., male



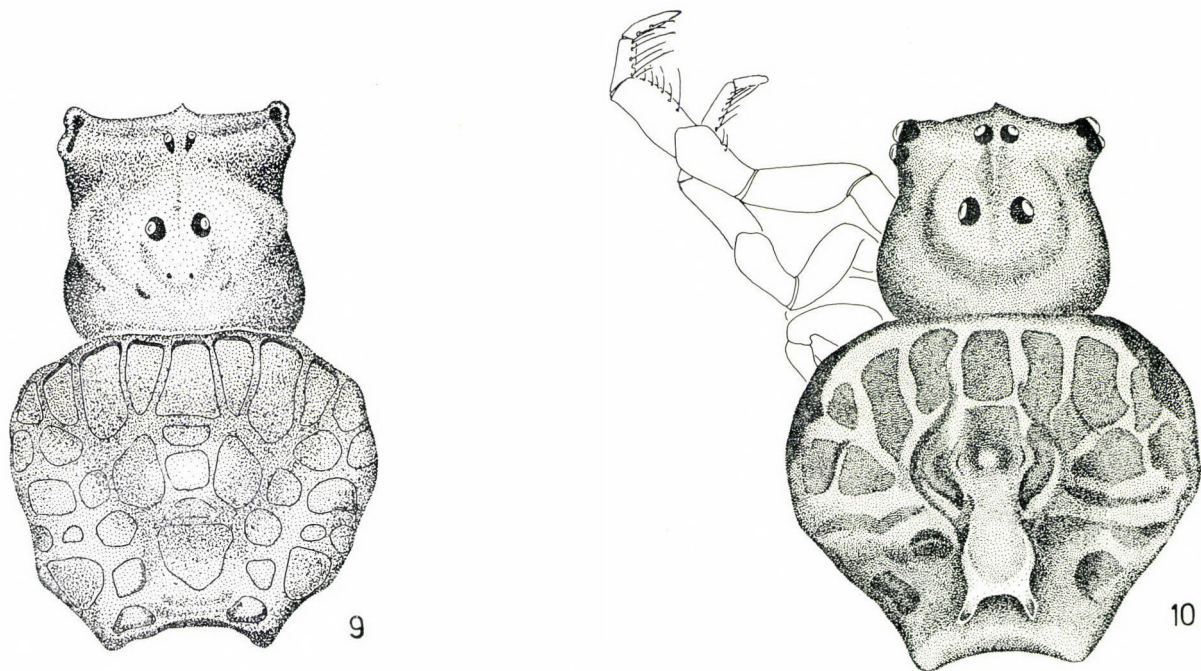


Figs. 4–6. 4 = *Archemorus vicarius* sp. n., female; 5 = *A. dilatatus* sp. n., female, 6 = *A. dilatatus* sp. n., female

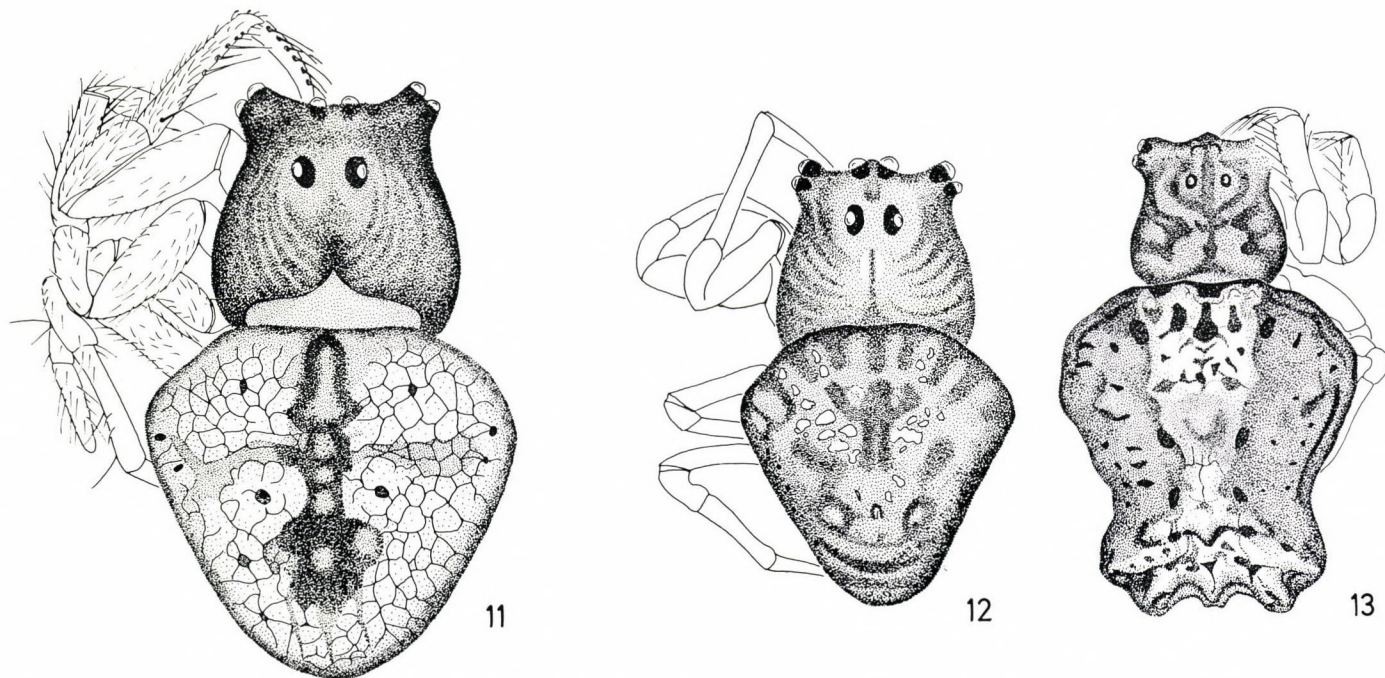




Figs. 7—8. 7 = *Archemorus sibil* CHRYSANTHUS, 1971, female; 8 = *A. roosdorpi* CHRYSANTHUS, 1971, female



Figs. 9–10. 9 = *Archemorus tuberculatus* sp. n. female; 10 = *A. tuberculatus* sp. n., male



Figs. 11–13. 11 = *Archemorus kaszabi* sp. n., female; 12 = *A. kaszabi* sp. n., male; 13 = *A. simsoni* SIMON, 1893, female, juv.



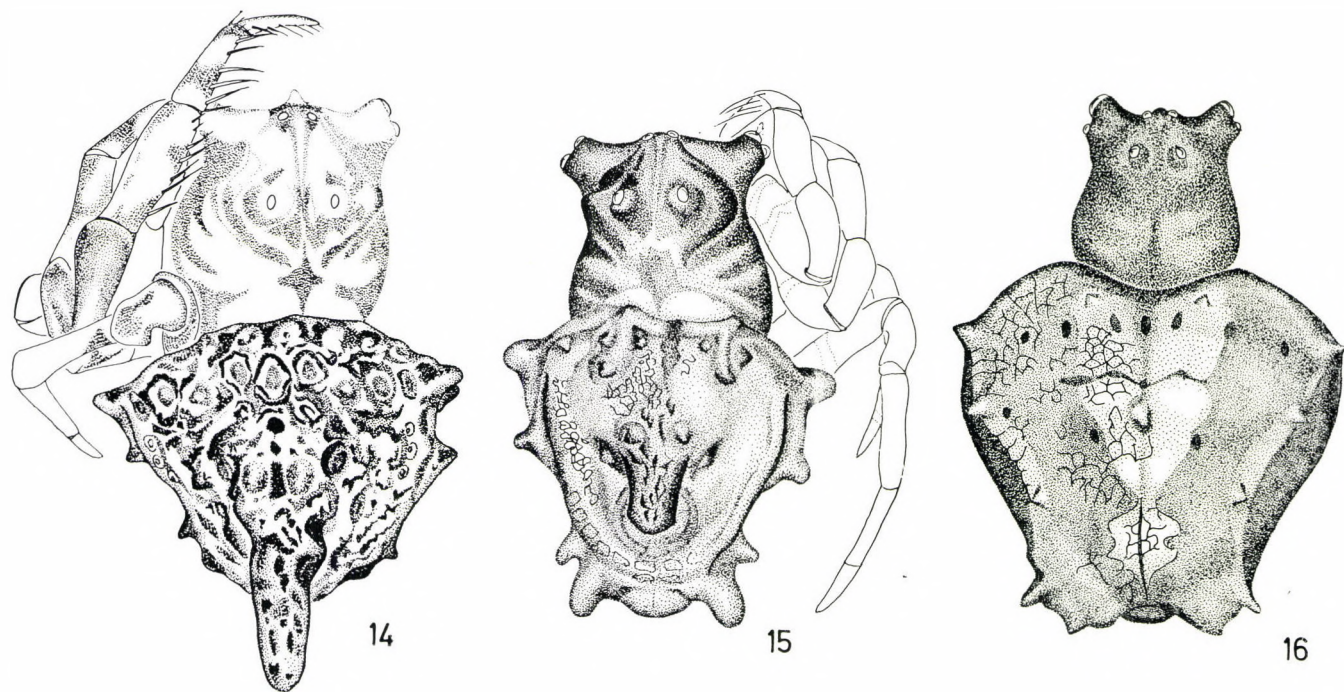
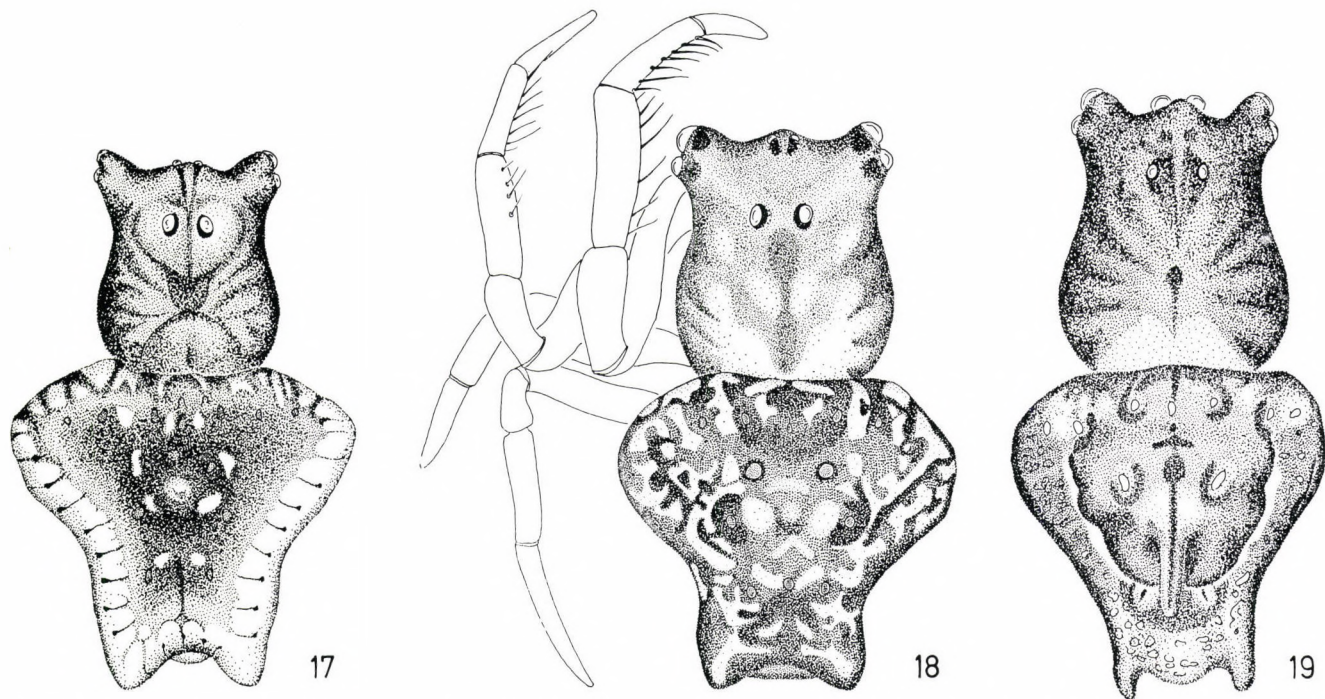
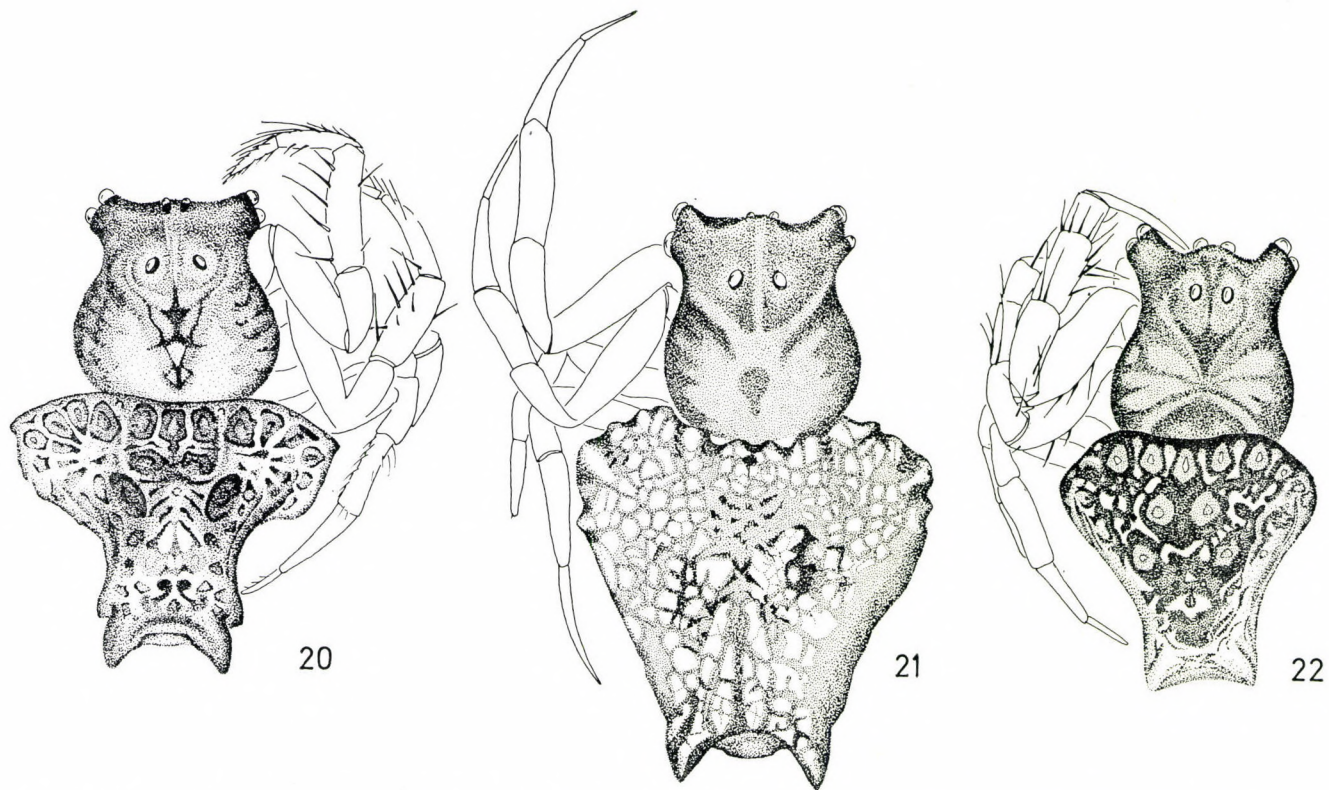


Fig. 14–16. 14 = *Archemorus coronatus* sp. n., female, juv.; 15 = *A. coronatus* sp. n., female, juv. (abdominal process missing); 16 = *A. grandis* sp. n., female



Figs. 17—19. 17 = *Archemorus montanus* sp. n., female; 18 = *A. montanus* sp. n., male; 19 = *A. varians* sp. n., male (aberrant abdominal form)



Figs. 20–22. 20 = *Archemorus alatus* (KEYSERLING, 1890), female, juv.; 21 = *A. varians* sp. n., female; 22 = *A. varians* sp. n., male



- 16 (9) Abdomen as long as, or longer than, wide, attenuating posteriorad, therefore with converging sides for at least some distance. Posterior row of eyes less procurved; posterior median eyes in a superior view situated at most at one-third, or hardly beyond that, of cephalothoracic length.
- 17 (18) End of abdomen rounded: never with tubercles or appendages. Median eyes constituting a square. Spine 1 of tibia I originating near basis of joint, spines 2–8 on apical half of joint; distance between spines 1 and 2 almost as long as length of spine 1. — New Guinea, in moss forests **kaszabi** sp. n.
- 18 (17) End of abdomen with one or more tubercles or appendages.
- 19 (20) Cephalothorax with large tubercles or appendages; the two lateral eyes situated in pairs, posterior median eyes separately, on one of these excrescences. About middle of abdomen an unpaired, long, obliquely reclinate to erect appendage present; its sides with 3–4, and dorsally also with 3–4, additional yet smaller pairs of tubercles. Tibia I short, thrice longer than wide, hardly longer than patella, basal half with merely 1, apical half with 6 thick, preapically with 2 very short spines. — New Guinea **coronatus** sp. n.
- 20 (19) Cephalothorax without large tubercles or appendages; if some smaller tubercles with eyes present, abdomen always without an unpaired long appendage, and basal half of tibia I invariably with more than one spine.
- 21 (24) Abdomen terminating in 4 or 5 obtuse tubercles posteriorly; tubercles occasionally with a pointed appendage. First three spines of tibia I always strikingly short: hardly longer than half width of joint.
- 22 (23) Posterior median eyes on a sphaerical tubercle; anterior median eyes removed from each other at a distance greater than diameter of an eye. Tubercles of abdominal end and of shoulder obtuse, rounded. Tibia I with 8 spines internally: spines 1–3 short, spine 4 longer than width of joint, spines 5–8 abruptly, scalately shortening. — Australia; redescription based on young specimens **simsoni** SIMON, 1893
- 23 (22) Posterior median eyes situated on a flat tubercle; anterior median eyes nearer to each other than diameter of an eye. End of abdomen and shoulder, as well as sides, with 5–6 pairs of pointed, coniform, small tubercles. Tibia I with 6 spines internally: all spines short, not or hardly longer than half width of joint. — New Caledonia **grandis** sp. n.
- 24 (21) Cordiform end of abdomen furcate; terminating in two acute or obtuse apices. First three spines of tibia I not strikingly short: longest one (usually spine 3) always longer than width of joint.
- 25 (26) Anterior half of abdomen very wide; before its half length abruptly attenuating to nearly its one-third width, terminating parallel-sided and in two pairs of adjacent teeth. Pattern of abdomen resembling a dog's-head juxtaposed to sigilli. Tibia I with 6 longer and 1 shorter spines: spine 2 originating twice as far from spine 1 as from spine 3. — Australia (Redescription based on a single juvenile specimen from Queensland) **alatus** (KEYSERLING, 1890)
- 26 (25) Abdomen gradually attenuating posteriorad to about half its width terminating in a single pair of teeth. Tibia I with 7–8 longer and 1 minute teeth: spine 2 about half distance between spine 1 and 3.
- 27 (28) Quadrangle of median eyes as wide, or almost as wide, as long; distance between anterior median eyes smaller than diameter of one eye. Anterior margin of abdomen shoulders without tubercles or teeth. Tibia I with 8 large and 1 minute bristle. — New Guinea, in moss forests. **montanus** sp. n.
- 28 (27) Quadrangle of median eyes longer than wide; distance between anterior median eyes larger than diameter of one eye. Anterior margin of abdomen and shoulder often with tubercles. Tibia I with 7 large and 1 minute spine. — New Caledonia and Loyalty Islands, in humid forests **varians** sp. n.

### *Archemorus furcatus* sp. n.

(Figs. 1, 2, 23, 58, 62)

♀ ad. Cephalothorax 2.5 mm, abdomen 4.0 mm. Quadrangle of median eyes a parallelogram, twice longer than wide; posterior median eyes nearer to each other than diameter of one eye. Anterior and posterior median eyes

nearly equal in size. Lateral eyes situated on a long, corniform, common appendage, anterior lateral eyes considerably bigger than posterior ones. In a superior view, eye-group essentially shorter than quarter length of cephalothorax.

Cephalothorax considerably longer than wide; behind eyes attenuating and then again widening, its widest section at its posterior third.

Abdomen cordiform, attenuating posteriorad, terminally obtusely (♀) or divergently acutely (♂) furcate.

Interior side of tibia I with 7 erect spines, these very long, spine 3 longest of all, longer than half length of tibia. All spines situated on a protuberant tubercle.

♀ epigyne wider than long (Fig. 62).

Holotype: 1 ♀, Townsville, 15–21. III. 1965; paratype: 1 juv. ♂, Mackay-Bowen, 12–13. III. 1965.

Holotype deposited in the Australian National Insect Collection, Canberra.

### ***Archemorus transversus* sp. n.**

(Figs. 3, 24, 39)

♂ ad. Cephalothorax 2.4 mm, abdomen 2.1 mm. Quadrangle of median eyes a parallelogram or hardly discernibly widening posteriorad, one and a half times as long as wide. Anterior median eyes very large: their diameter twice as large as that of posterior median eyes, removed from each other at a distance about length of their radii, situated on a slightly protuberant tubercle. Posterior median eyes essentially smaller, removed from each other at a distance more than thrice the diameter of an eye, situated on a large flat tubercle. Lateral eyes not on an appendage or tubercle, in a superior view on anterior margin of cephalothorax; anterior lateral eyes larger than posterior ones. In a superior view, length of eye-group about equalling one-quarter of cephalothoracic length.

Cephalothorax gradually widening posteriorad, without any constriction, its widest section at its posterior quarter.

Abdomen widening posteriorad, its posterior third with a laterally projecting obtuse appendage each; its widest section posteriorly and there wider than long, its surface with sigilli.

Interior side of tibia I with 5 spines; spine 2 longest of all, longer than half length of tibia.

Holotype: 1 ♂, Sydney, Katoomba, 27. II. 1965.

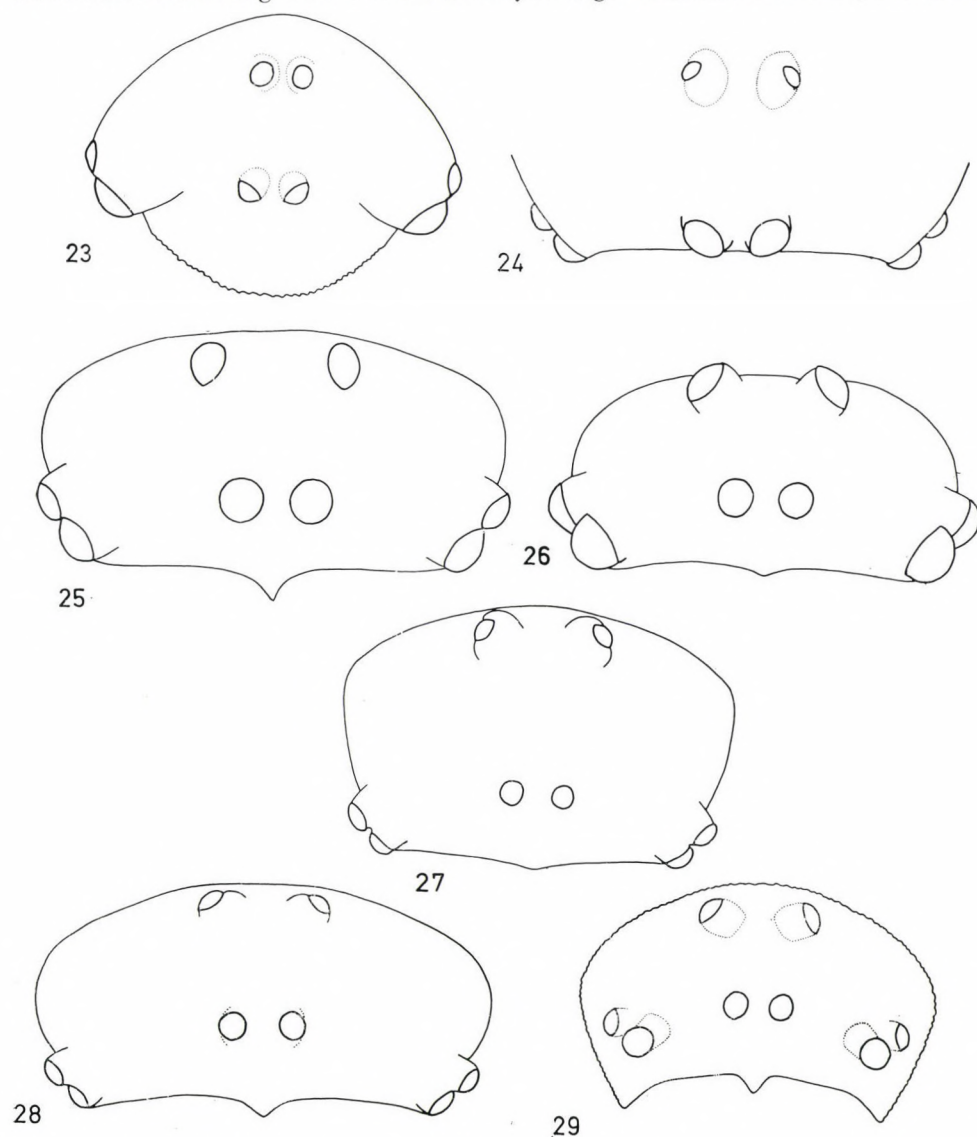
Holotype deposited in the Australian National Insect Collection, Canberra.



**Archemorus dilatatus** sp. n.

(Figs. 5, 6, 26, 46, 60)

♀ ad. Cephalothorax 1.9 mm, abdomen 2.4 mm. Cephalothorax extremely flat; quadrangle of median eyes widening posteriorad, posteriorly somewhat wider than long. Posterior median eyes larger than anterior ones, situated



Figs. 23–29. Cephalothorax, frontally, of 23 = *Archemorus furcatus* sp. n., female; 24 = *A. transversus* sp. n., male; 25 = *A. vicarius* sp. n., female; 26 = *A. dilatatus* sp. n., female; 27 = *A. roosdorpi* CHRYSANTHUS, female; 28 = *A. occidentalis* REIMOSER, 1936, female; 29 = *A. kaszabi* sp. n., female

on a tubercle and removed from each other about twice an eye diameter and same distance from anterior median eyes as from each other. Anterior median eyes nearer to each other than their diameter. Posterior row of eyes weakly recurved or straight; in a superior view, length of eye-group considerably shorter than quarter length of cephalothorax.

Cephalothorax hardly widening posteriorad, with nearly parallel sides; its widest section at its posterior third, but also here hardly wider than at lateral eyes and at cephalic portion: in anterior third of cephalothorax. Cephalothorax only slightly longer than wide, connected with abdomen by a superiorly visible stripe.

Narrowest section of abdomen at its anterior part, its widest section posteriorly at most one and a half times as wide as its narrowest section; its middle section without any abrupt constriction; abdomen quadrangular, slightly and trapezoidally widening posteriorad.

Interior side of tibia I with 8 spines; spines 2 and 3 longest of all, spines 1 and 4 short: half as long as subsequent spines 2 and 5, spine 7 about as long as spine 1, spine 8 minute. Epigyne given in Fig. 60.

Holotype: 1 ♀, Townsville 15–21. III. 1965; paratypes: 1 ♀, same data, 1 ♀: Ingham, 22–28. III. 1965.

Holotype deposited in the Australian National Insect Collection, Canberra.

### ***Archemorus vicarius* sp. n.**

(Figs. 4, 35, 47, 61)

♀ ad. Cephalothorax 1.7 mm, abdomen 2.4 mm. Resembling preceding species, but well distinguishable by some features, as follows: Narrowest section of abdomen anterior to its half length, there pandurately constricted, widest beyond this constriction, at posterior third of abdominal length: there more than twice wider than at constriction (at its narrowest section); abdomen subsequently again attenuating; its shape largely an irregular sexagon.

Chaetotaxy (spinosity) of tibia I similar, but spine 1 about as long as half length of spine 2.

Epigyne with a large, anchor-shaped transverse plate (Fig. 61).

Holotype: 1 ♀, New Caledonia, Île des Pins, 25–27. II. 1977; paratypes: Mokene to Dothie, New Caledonia, 22. III. 1968. leg.: DR. GRESSITT (BM) 1 ♀, Lifou, 20. II. 1977. 1 ♀ juv., Lifou, 21. II. 1977, 1 ♀ juv., Hienghene, 29. I. 1977, 1 ♀ juv., Koumac, 15. II. 1977, 1 ♀ juv. All leg. by Dr. J. BALOGH.

Holotype deposited in the Hungarian Natural History Museum (Balogh Collection), Budapest.

### ***Archemorus occidentalis* REIMOSER, 1936**

(Figs. 28, 51, 63)

♀ ad. Cephalothorax 2.9 mm, abdomen 4.0 mm. Cephalothorax very wide, its widest section behind eye-group, before its half length. Quadrangle of median eyes hardly longer than wide, slightly widening posteriorad. Anterior

median eyes removed from each other at a distance somewhat bigger than diameter of an eye. Posterior median eyes removed from each other by about threefold diameter of one eye, situated on a low tubercle, lateral eyes on a short common tubercle. In a superior view, posterior row of eyes slightly procurved, and quadrangle of median eyes shorter than quarter length of cephalothorax.

Abdomen transversal, nearly twice wider than long, its anterior margin concavely truncate, laterally arcuate, posteriorly with an obtusely protruding apex in middle, abdominal shape largely sexangular, with 9 pairs of larger and an antero-median unpaired sigillum: thus number of sigilli 19; parallel with anterior margin 9, medially 6, laterally before obtuse posterior apex on both sides with 2 larger, sigilli present; in addition, sporadically but largely in a symmetrical arrangement, a number of minute sigilli also observable.

Interior side of tibia I with 11 spines: spines 1, 2, 4, 6 short, spines 3, 5 long, spines 7—11 abruptly and scalately shortening.

Epigyne as in Fig. 63.

The redescription is based on the paratype conserved in the Natural History Museum, Vienna; the specimen originated from the island Buru.

#### ***Archemorus roosdorpi* CHRYSANTHUS, 1971**

(Figs. 8, 27, 50, 64)

♀ ad. Cephalothorax 2.8 mm, abdomen 4.0 mm. Cephalothorax nearly as wide as long, widening posteriorad, its widest section behind posterior third. Quadrangle of median eyes longer than wide (longer by about half of its width), posterior median eyes situated on a robust tubercle. Anterior median eyes removed from each other at a distance greater than their diameter. In a superior view, quadrangle of median eyes occupying nearly half length of cephalothorax, that is, posterior eye row strongly procurved. An obtuse tubercle on each side of cephalothorax, at height of posterior median eyes.

Abdomen twice wider than long, its shape, also that of sigilli and their number and position similar to those in *occidentalis*, but sigilli sometimes hardly discernible.

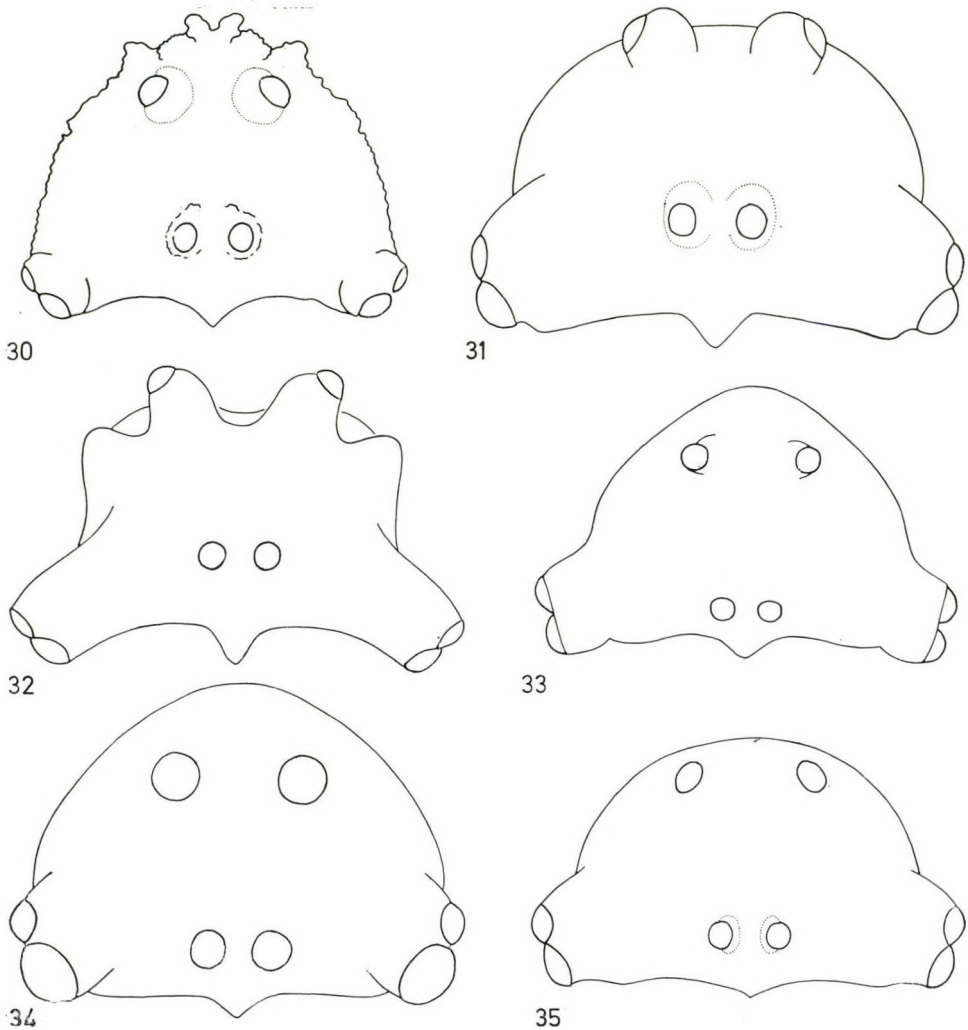
Number and shape of spines on interior side of tibia I similar to those in the preceding species, but the long spines relatively longer: apex of spine 2 projecting beyond base of spine 3.

Epigyne as in Fig. 64.

This and the preceding species rather resemble each other, but they are still well distinguishable on the basis of the eye-groups and the epigynes. As I had occasion to study merely a single paratype specimen of *Archemorus occidentalis* REIMOSER, 1936, I am unable to offer an opinion as to the sharpness of the specific differences. It may be that *occidentalis* could be maintained



only as a geographic subspecies of the widely distributed and common *roosdorpi*. *Archemorus roosdorpi* CHRYSANTHUS, 1971, is the commonest known species of the genus: of the 104 collecting localities 41 refer to this species, and the 62 specimens collected there represent 24.5% of the study material. A montane forest species, advancing also to the level of the moss forests, too.



Figs. 30–35. Cephalothorax, frontally, of 30 = *Archemorus tuberculatus* sp. n., female, 31 = *A. simsoni* SIMON, 1893, female, juv.; 32 = *A. coronatus* sp. n., female, juv.; 33 = *A. alatus* (KEYSERLING, 1890), female, juv.; 34 = *A. grandis* sp. n., female; 35 = *A. varians* sp. n., female

**Archemorus sibil** CHRYSANTHUS, 1971

(Figs. 7, 43, 44, 45, 65)

♀ ad. Cephalothorax 1.7 mm, abdomen 3.0 mm. Cephalothorax as wide as long, widest beyond its half length, but just, or nearly, as wide also anteriorly, at lateral eyes: in a superior view highly vaulted. Quadrangle of median eyes very long, nearly twice longer than wide, posteriorly more than one and a half times wider than anteriorly. Anterior median eyes removed from each other at a distance of about one and a half diameter of an eye. In a superior view, posterior median eyes situated at half length of cephalothorax, therefore posterior row of eyes extremely procurved. Lateral eyes situated on a common, obtuse appendage, posterior median eyes on a large, obtuse tubercle. Behind posterior median eyes, thoracic portion with parabolic lines of tubercles, both ends of these lines pointing anteriorad.

Abdomen at most one and a half times wider than long, its widest section before its half length. Abdomen covered superiorly with sigilli: median line with 5 unpaired sigilli, both sides with 18 pairs each of larger sigilli, therefore altogether 41 sigilli present.

Tibia I two and a half times longer than wide, with 12—13 inclinate bristles (discounting 4—5 very short intermediate hairlets). Inner side of tarsus I with 6 large bristles; bristles 1 and 3 shorter than the others; between the long bristles also 2—3 very short bristles present, their length increasing anteriorad.

Epigyne transversely semicircular, its posterior margin with a dark, crescent-shaped, sclerotized rim (Fig. 65).

New Guinea, in montane forests, sporadically.

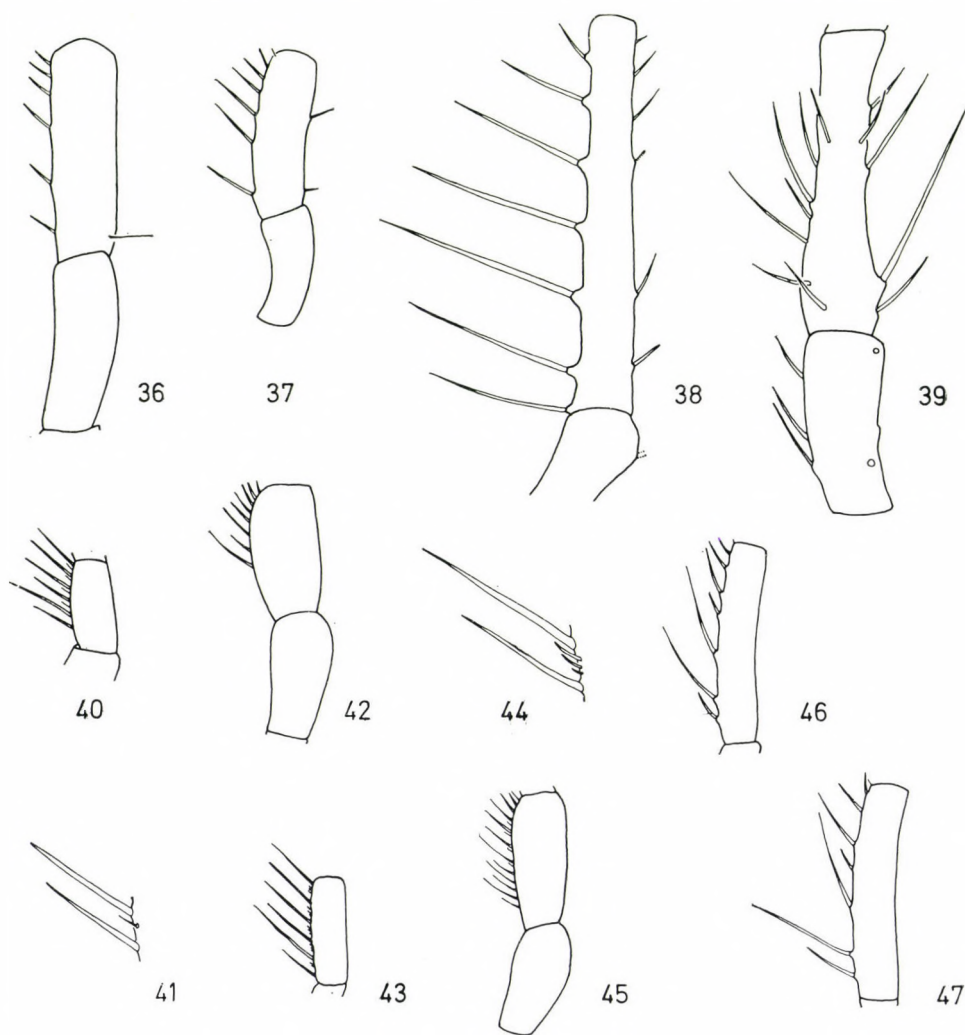
**Archemorus tuberculatus** sp. n.

(Figs. 9, 10, 40, 41, 42, 66)

♀ ad. Cephalothorax 2.0 mm, abdomen 2.4 mm. Cephalothorax wider than long, its widest section at its posterior third, but similarly wide also at lateral eyes, highly vaulted, at line of posterior median eyes a large, obtuse tubercle on both sides. Quadrangle of median eyes only slightly longer than wide, posteriorly nearly twice wider than anteriorly. Anterior median eyes removed from each other at a distance hardly greater than their diameter. In a frontal view, two pairs of tubercles present behind posterior median eyes. Both posterior and anterior median eyes situated on large tubercles, and also the two pairs of lateral eyes each situated on a common tubercle. Surface of cephalothorax irregularly ruguloso-scröbiculated. In a superior view, posterior median eyes situated nearly at half length of cephalothorax, and the two pairs of tubercles well visible behind eyes.

Abdomen as long as wide, anteriorly and bilaterally rounded, posteriorly obtusely truncate. Sigilli more densely arranged than in *sibil*; median line with 5 unpaired ones, bilaterally with 17 pairs of sigilli, therefore altogether with 39 sigilli. Number of smaller sigilli eventually greater or smaller.

Tibia I twice wider than long, its outer margin straight, inner one arcuate, with 8 bristles removed to end of joint: bristle 1 originating hardly



Figs. 36–47. 36–39, 42, 44–47 = Patella I and tibia, superior view, 40, 43 = metatarsus I, superior view, 41 = 3 and 4 spine of metatarsus I, superior view. — 36 = *Archemorus grandis* sp. n., female; 37 = *A. alatus* (KEYSERLING, 1890); 38 = *A. furcatus* sp. n., female; 39 = *A. transversus* sp. n., male; 40 = *A. tuberculatus* sp. n., female; 41 = *A. tuberculatus* sp. n., female; 42 = *A. tuberculatus* sp. n., female; 43 = *A. sibil* CHRYSANTHUS, 1971, female; 44 = *A. sibil* CHRYSANTHUS, 1971, female; 45 = *A. sibil* CHRYSANTHUS, 1971, female; 46 = *A. dilatatus* sp. n., female; 47 = *A. vicarius* sp. n., female



anterior to, bristles 2—8 beyond, half of tibial length. Tarsus I with 6 large spines, with only one intermediate minute spine between each.

Epigyne as in Fig. 66.

Holotype: 1 ♀, Townsville, paratype: 2 juv. ♀, same locality, 1 juv. ♀, Murwillumbah. Holotype deposited in the Australian National Insect Collection, Canberra.

### ***Archemorus kaszabi* sp. n.**

(Figs. 11, 12, 29, 55, 59)

♀ ad. Cephalothorax 1.2 mm, abdomen 1.4 mm. Cephalothorax slightly longer than wide, gradually widening posteriorad, widest section in its posterior third; its posterior part, meeting abdomen, glabrous. Quadrangle of median eyes as long as wide anteriorly, and posteriorly nearly twice wider than anteriorly. Anterior median eyes removed from each other at a distance equalling one eye diameter, posterior median eyes more than two diameters, also bigger than anterior median eyes and situated on tubercles. Every lateral eye appearing also on a distinct tubercle. In a superior view, eye-group equalling one-third of cephalothoracic length.

Abdomen as wide as long, or sometimes slightly wider, its widest section in its anterior third, then attenuating anteriorad and posteriorad, irregularly hexagonal, with rounded angles. Abdomen medially with an obscure pattern.

Tibia I thin, about five times longer than wide, its inner margin with 8 spines: spine 1 the longest of all and originating near base, spine 2 far removed from spine 1, originating beyond half length of tibia, followed by spines 3—8, spine 3 considerably shorter than spines 2 and 4, all other ones abruptly and scalately shortening.

Epigyne more than twice wider than long, with two nearly adjacent circles (Fig. 59).

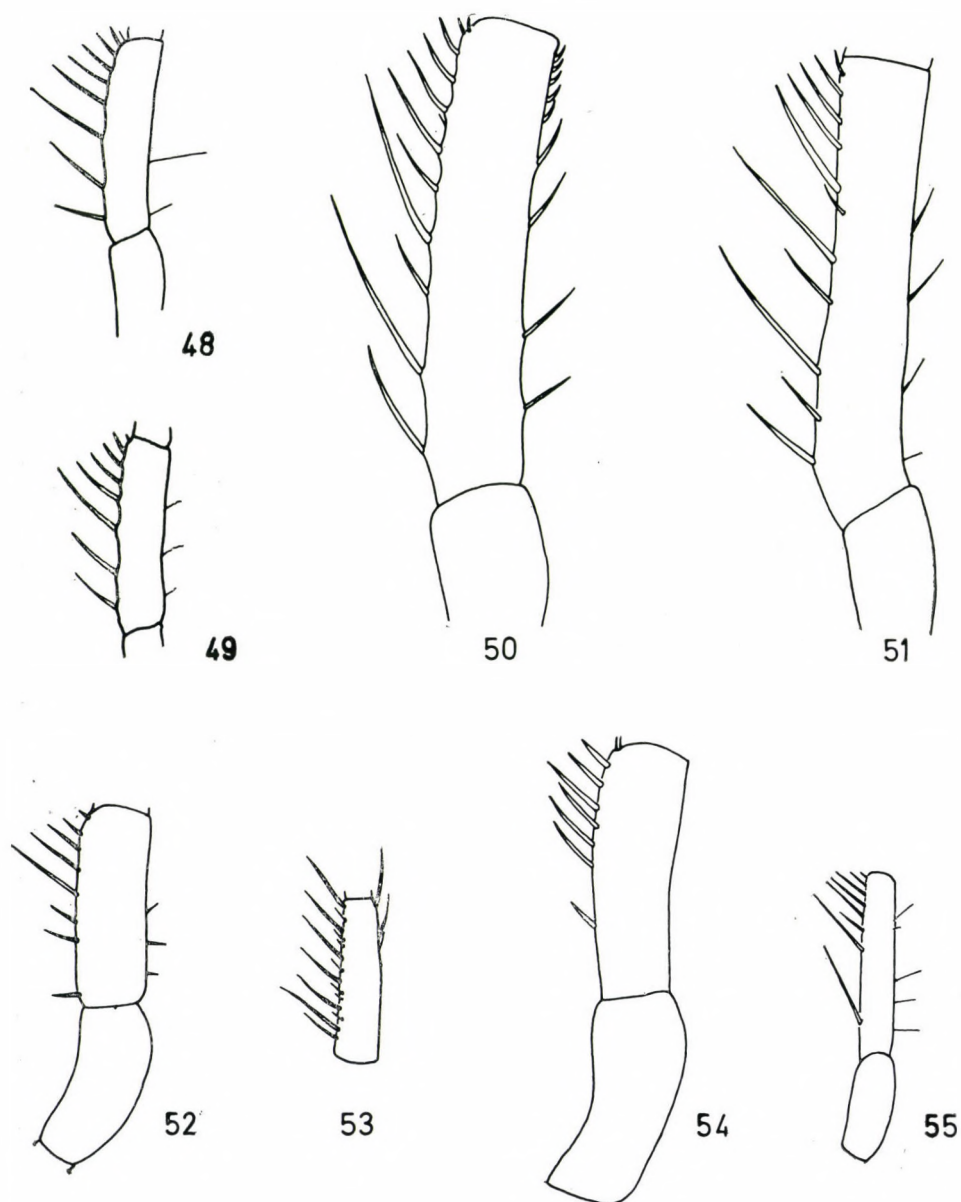
Holotype: 1 ♀ ad. Mount Kaindi, moss forest, 19—24. VIII. 1968, paratypes: 1 ♀. 30, 21. juv. from the same locality, Wau, 22. VIII. 1968; 7 juv. Mt. Giluwe, 28. VIII. 1969, 1 ♀, 2 ♂; Wisselmeren, 1700 m, Waghete Tigi, 18. VIII. 1955, GRESSITT 1 ♀, (BM).

Holotype deposited in the Hungarian Natural History Museum (Balogh Collection), Budapest.

### ***Archemorus coronatus* sp. n.**

(Figs. 14, 15, 32, 54)

♀ juv. Cephalothorax 2.7 mm, abdomen 3.1 mm. Cephalothorax slightly longer than wide; in a superior view, lateral eyes situated terminally on a long, divergent tubercle; posterior median eyes also on long tubercles, as well as anterior median eyes on a tubercle. Aligned with, but externally of, posterior



Figs. 48–55. 48–52, 54–55 = Patella I and tibia, superior view; 53 = metatarsus I, superior view. — 48 = *Archemorus montanus* sp. n., female; 49 = *A. varians* sp. n., female; 50 = *A. roosdorpi* CHRYSANTHUS, 1971, female; 51 = *A. occidentalis* REIMOSER, 1936, female; 52 = *A. simsoni* SIMON, 1893, female; 53 = *A. simsoni* SIMON, 1893, female, juv.; 54 = *A. coronatus* sp. n., female; 55 = *A. kaszabi* sp. n., female

median eyes a large tubercle on each side. In line of posterior median eyes, cephalothorax constricted, before and behind it widening again. The length of the quadrangle of median eyes equalling one-third of cephalothoracic length. In a frontal view, quadrangle of median eyes about as wide as long, and posteriorly more than twice wider than anteriorly. Each pair of lateral eyes situated terminally on long, corniform, exclinate to obliquely declinate appendages; posterior median eyes on a high, corniform appendage each. Externally from posterior median eyes, an obtuse tubercle on both sides present.

Abdomen medially with an unpaired, long, digitiform, obliquely reclinate to erect appendage; laterally with 3—4, and dorsally also with 3—4 smaller pairs of tubercles.

Tibia I short, thrice longer than wide, only slightly longer than patella, basally with merely one, its apical half with 6, and preapically with 2 minute spines.

Holotype: Wau, McAdam Park, 18—21. I. 1965, 1 ♂ ad. 1 ♀ juv.; Wau, Koranga, 3. XI. 1961 (BM); Resugal, 1. VII. 1963 (BM), 1 juv.

Holotype deposited in the Hungarian Natural History Museum (Balogh Collection), Budapest.

### **Archemorus simsoni** SIMON, 1893

(Figs. 13, 31, 52, 53)

♀ juv. Cephalothorax 1.9 mm, abdomen 3.1 mm. Cephalothorax as long as wide, its widest section anteriorly at lateral eyes and at half cephalothoracic length; lateral eyes situated on protuberant and paired, median eyes on distinct, tubercles. In a superior view, the length of quadrangle of median eyes equalling one-third of cephalothoracic length. Quadrangle of median eyes as wide as long anteriorly, posteriorly twice wider than anteriorly. Anterior median eyes removed from each other at a distance of double eye diameter.

Abdomen slightly attenuating posteriorad, narrowest at its last quarter, subsequently again wider and ending in 5 obtuse tubercles. Abdomen medially with an erect tubercle and some smaller, sporadic pairs of tubercles.

Inner side of tibia I with 8 spines; spines 1—3 short, spine 4 longer than width of joint, spines 5—8 abruptly and scalately shortening.

Redescription based on juvenile ♀♀ originating from Melbourne, Canberra.



***Archemorus grandis* sp. n.**

(Figs. 16, 34, 36, 56)

♀ ad. Cephalothorax 2.1 mm, abdomen 4.0 mm. Cephalothorax slightly longer than wide, its widest section slightly beyond its half length. The length of quadrangle of median eyes equalling one-third of cephalothoracic length. Each lateral eye on a large, thick, corniform appendage. Quadrangle of median eyes considerably longer than wide, posteriorly nearly twice wider than anteriorly. Anterior median eyes nearer to each other than diameter of one eye, posterior median eyes removed from each other by about double eye diameter. Anterior lateral eyes very large, twice larger than posterior lateral eyes.

Abdomen slightly wider than long, its widest section anteriorly at shoulders. End of abdomen, shoulders, and sides with 5—6 pairs of sharp, coniform, small tubercles.

Inner side of tibia I with 6 spines, all spines short, not or hardly longer than half width of joint.

Epigyne as in Fig. 56.

Holotype: New Caledonia, Île des Pins, 25. II. 1977, 1 ♀ ad.; paratype: New Caledonia, 14. II. 1963, 1 ♀ ad. (BM).

Holotype deposited in the Hungarian Natural History Museum (Balogh Collection) Budapest.

***Archemorus alatus* (KEYSERLING, 1890)**

(Figs. 20, 33, 37)

1 ♀ juv. Cephalothorax 1.6 mm, abdomen 2.1 mm. Cephalothorax about as long as wide. Lateral eyes situated on a thick, strongly protuberant appendage, posterior median eyes on small tubercles. The length of quadrangle of median eyes equalling one-quarter or slightly more of cephalothoracic length. Cephalothorax strongly constricted in line of posterior median eyes. Quadrangle of median eyes essentially longer than wide posteriorly, posteriorly twice wider than anteriorly. Anterior median eyes as far from each other as diameter of one eye. Lateral eyes larger than median eyes.

Anterior half of abdomen very wide, then before its half length abruptly constricted to nearly its third width; margins parallel. Apex of abdomen terminating in two pairs of teeth following each other. Arrangement of sigilli, pattern and shape of abdomen resembling a dog's-head.

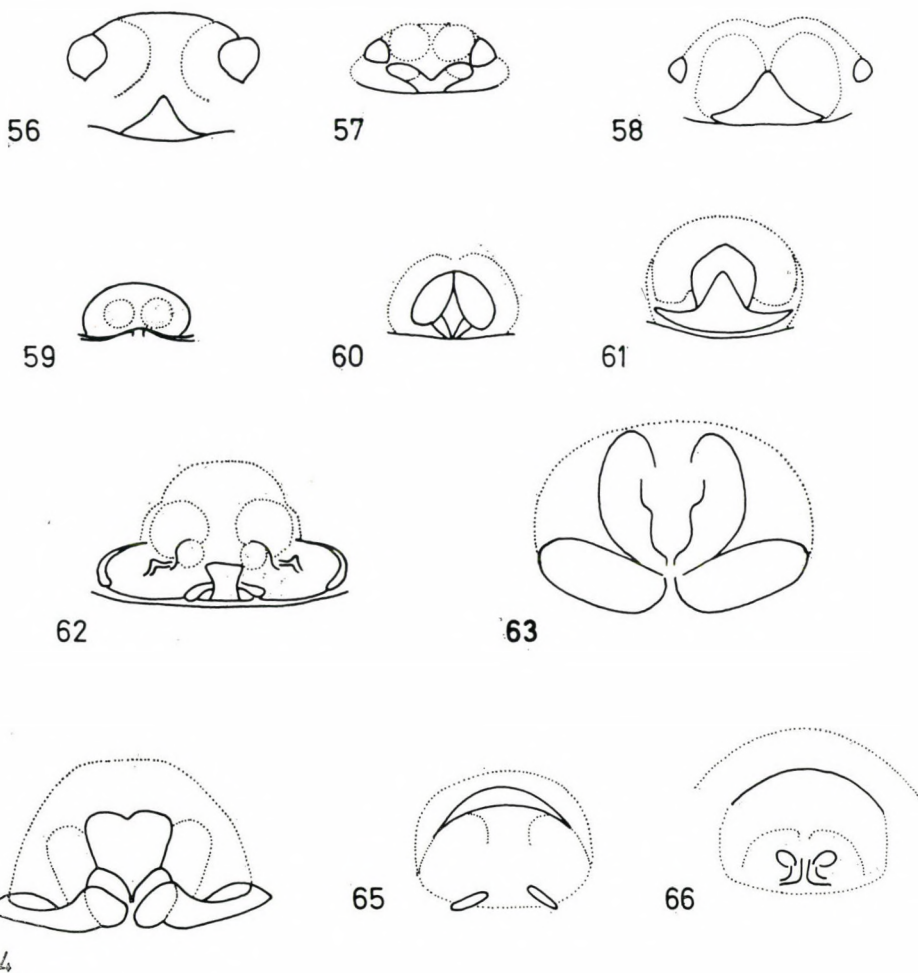
Tibia I with 6 larger and 1 small spines, distance between spines 1 and 2 greater than that between the following ones.

1 ♀ juv. Townsville, serving for the redescription.

**Archemorus montanus** sp. n.

(Figs. 17, 18, 48, 57)

♀ ad. Cephalothorax 1.7 mm, abdomen 2.5 mm. Cephalothorax slightly longer than wide, its widest section anteriorly at lateral eyes, and posteriorly at last quarter of cephalothoracic length. Quadrangle of median eyes shorter than quarter length of cephalothorax, posterior row of eyes slightly procurved. Quadrangle of median eyes slightly longer than wide, posteriorly more than twice longer than anteriorly. Posterior median eyes essentially larger than anterior median eyes, these latter removed from each other at a distance



Figs. 56–66. Epigyne, female, of 56 = *Archemorus grandis* sp. n.; 57 = *A. montanus* sp. n.; 58 = *A. varians* sp. n.; 59 = *A. kaszabi* sp. n.; 60 = *A. dilatatus* sp. n.; 61 = *A. vicarius* sp. n.; 62 = *A. furcatus* sp. n.; 63 = *A. occidentalis* REIMOSER, 1936; 64 = *A. roosdorpi* CHRYSANTHUS, 1971; 65 = *A. sibil* CHRYSANTHUS, 1971; 66 = *A. tuberculatus* sp. n.

greater than diameter of one eye, posterior median eyes at double eye diameter. Lateral eyes situated on a thick appendage, anterior eye bigger than posterior one. Cephalothorax with a dark pattern.

Abdomen slightly wider than long, its widest section anteriorly at shoulders, then evenly attenuating posteriorad, terminally with a pair of obtuse apices; its anterior margin without tubercles or teeth.

Tibia I slightly arcuate, its inner side with 7—8 larger and 1 very small teeth.

Epigyne as in Fig. 57.

Holotype: 1 ♀ ad. New Guinea, Mt. Kaindi, moss forest, 16. IX. 1968, paratypes: same locality, 9 ♀, 6 ♂ 27 juv.; Mt. Wilhelm, 14—18. IX. 1968. 1 ♀ 12 juv.; Mt. Giluwe, 1 ♀, 1 juv. 3. V. 1963, SEDLAČEK (BM).

Holotype deposited in the Hungarian Natural History Museum (Balogh Collection), Budapest.

### *Archemorus varians* sp. n.

(Figs. 19, 35, 49, 58)

♀ ad. Cephalothorax 1.9 mm, abdomen 2.5 mm. Cephalothorax slightly longer than wide, its widest sections anteriorly at lateral eyes and posteriorly at last quarter of cephalothoracic length. Quadrangle of median eyes shorter than quarter of cephalothoracic length, posterior row of eyes slightly pro-curved.

Quadrangle of median eyes essentially longer than wide, posteriorly twice wider than anteriorly. Posterior median eyes slightly larger than anterior ones, these latter removed from each other at a distance greater than diameter of one eye. Posterior median eyes removed from each other at a distance two and a half times bigger than diameter of one eye.

Abdomen slightly longer than wide, widest at shoulders, attenuating posteriorad, terminating in two acute appendages. Anterior margin of abdomen and shoulders with 2—3 pairs of tubercles.

Epigyne as in Fig. 58.

Inner side of tibia I not arcuate, with 7 large and 1 small spines.

Holotype: 1 ♀ ad. New Caledonia, Col d'Amieu, Mont Rembai, 19—21. I. 1977; paratypes: 1 ♀ ad. same locality, La Croven, 13. III. 1961; leg.: J. SEDLAČEK (BM), 1 ♀; Month Koghi, 13. II. 1977, 3 ♂, 1 ♀ juv.; Mont Aupinié, 31. I. 1977, 1 ♀; Hienghene, 5. II. 1977, 1 ♀; Tiébaghi, Nehué valley, 16. II. 1977, 10 ♀ juv.; Île des Pins, 25—27. II. 1977, 1 ♀; Koumac, 15. II. 1977, 3 ♀ juv.; Lifou, 20. II. 1977, 2 ♀ juv.

Distributed in New Caledonia and the Loyalty Islands.

Holotype deposited in the Hungarian Natural History Museum (Balogh Collection), Budapest.



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## BEITRÄGE ZUR KENNTNIS DER EUROPÄISCHEN ARTEN DER GATTUNG *CHLOROPS* MEIGEN, 1803 (DIPTERA: CHLOROPIDAE)

Von

Á. DELY-DRASKOVITS

(Eingegangen am 29. April 1977)

The description of 2 new *Chlorops* MEIGEN species collected in Hungary, are given and the key for 47 European species of the genus. 56 figures, mostly of hitherto never illustrated species are helping the identification of the flies.

Die Gattung *Chlorops* stellt eine der artenreichsten Gruppen der Familie Chloropidae dar. Aus der Paläarktis sind bisher mehr als 60 Arten dieser Gattung bekannt geworden, von denen fast 50 Arten auch in Europa vorkommen. Die Mehrzahl der oben erwähnten zahlreichen Arten wurde vor allem von mehreren hervorragenden Forschern der Gattung *Chlorops* beschrieben, wie von MEIGEN, ZETTERSTEDT, LOEW, STROBL, BECKER, DUDA, SMIRNOV, FEDOSEEVA und NARTSHUK. In Anlehnung an die von den genannten Autoren gegebenen Artbeschreibungen und Bestimmungsschlüssel habe ich mit der Aufarbeitung des *Chlorops*-Materials aus dem Karpatenbecken begonnen; dieses Material umfaßt etwa 2300 Exemplare, wovon mehrere Hunderte von BECKER, DUDA und Soós bestimmt wurden. Das gesamte Material befindet sich im Besitz des Ungarischen Naturwissenschaftlichen Museums (Budapest). Viele undeterminierte *Chlorops*-Exemplare konnten schon aufgrund des oben erwähnten Vergleichsmaterials auf ihre Artzugehörigkeit bestimmt werden. Im Falle jener Arten aber, die in meinem Vergleichsmaterial nicht vorhanden waren, erwiesen sich die Artbeschreibungen und Bestimmungsschlüssel — fast ausnahmslos — unbrauchbar. Die früheren Artbeschreibungen waren — wie allgemein bekannt — sehr kurzgefaßt und wenn nicht, dann wurden ihnen keine Abbildungen beigefügt. Die für die Trennung der ihren äußeren morphologischen Merkmalen nacheinander nahestehenden Arten im allgemeinen sich gut bewährten Genitalien-Untersuchungen wurden von den früheren Autoren fast immer außer acht gelassen.

Aus den erwähnten Gründen schien mir eine Revision der Typen der europäischen *Chlorops*-Arten unvermeidlich. Dazu hatte ich bei mehr als der Hälfte der in meinem Bestimmungsschlüssel einbezogenen 47 Arten tatsächlich Gelegenheit.\* Die Typen der folgenden Arten sind in unserem Museum

\* Für die Hilfsbereitschaft der Kollegen DR. R. DANIELSSON, DR. R. LICHTENBERG, DR. H. SCHUMANN und DR. J. ZUSKA möchte ich auch hier meinen Dank aussprechen.



aufbewahrt: *adjuncta* BECK., *babosae* n.sp., *finitima* BECK., *horrida* BECK., *lucens* BECK., *novaki* STROBL, *pallidior* BECK., *pallidiventris* DUDA, *signata* n.sp., *socia* BECK., *tectifrons* BECK. Aus dem Berliner Museum habe ich die Typen der folgenden Arten zur Untersuchung bekommen: *centromaculata* DUDA, *bisignata* BECK., *brevimana* LOEW, *planifrons* LOEW, *puncticornis* LOEW, *ringens* LOEW, *serena* LOEW, *varsoviensis* BECK. Aus Lund habe ich die Typen der folgenden Arten erhalten: *brunnipes* ZETT., *obs curella* ZETT., *scutellaris* ZETT., *troglydites* ZETT. Aus Wien und aus Prag wurden die Typen der Arten *longipalpis* DUDA und *bohémica* ZUSKA ausgeliehen. Konnte das Typen-Exemplar nicht herbeigeschafft werden, so sah ich mich gezwungen, die originalen Artbeschreibungen, evtl. die früheren Determinierungen und nicht zuletzt die persönlichen Mitteilungen und Meinungen der zur Zeit tätigen Spezialisten zu berücksichtigen. Dies trifft in erster Linie für die von MEIGEN beschriebenen *Chlorops*-Arten zu (*calceata*, *fasciata*, *geminata*, *gracilis*, *hypostigma*, *interrupta*, *laeta*, *scalaris*, *speciosa*), da — wie bekannt — ein Teil der Typen dieser Arten schon früher unbrauchbar geworden war, oder wenn sie überhaupt noch existieren, nicht ausleihbar sind. Auch eine Untersuchung der Typen-Exemplare der aus den europäischen Gebieten der Sowjetunion von SMIRNOV beschriebenen Arten bereitete für mich große Schwierigkeiten (*crassipalpis*, *palpata*, *riparia*), da sie ebenfalls nicht herbeigeschafft werden konnten.

Eine eingehende Untersuchung der Typen-Exemplare führte mich zu zahlreichen neuen Ergebnissen, von denen an dieser Stelle nur die wesentlichsten herausgegriffen werden sollen. Es wurde ein neuer Bestimmungsschlüssel für die Arten der Gattung *Chlorops* aufgestellt, der eindeutiger und mit mehr Sicherheit gebraucht werden kann als die früheren. Am Anfang des Schlüssels befinden sich die durch spezielle Merkmale gekennzeichneten Arten, bzw. Artengruppen. Die übrigen Arten lassen sich in 2 größere Gruppen einteilen: die erste von ihnen besitzt ein gelbes, die zweite dagegen ein völlig oder zum Teil braun-schwarzbraun gefärbtes 3. Fühlerglied. Bei der Trennung der Arten wurde der Musterung und Färbung des Stirndreiecks eine große Bedeutung beigemessen. Von einigen Ausnahmen abgesehen stelle ich sie in Abbildungen dar. Wenn es begründet erscheint, werden auch die Abbildungen der Surstylus beigefügt, die vor allem eine sichere Trennung der nahe verwandten Arten (wie z. B. Artengruppe *varsoviensis*) ermöglichen sollen.

Es gelang mir weiterhin festzustellen, daß die zu der Frühjahrs- und Sommer-, bzw. der Herbstgeneration gehörenden Exemplare der Art *Chlorops pumilionis* BJERK. charakteristische Farbenunterschiede aufweisen. Früher hat man diese Erscheinung ganz einfach als die extremen Werte einer infraspezifischen Variabilität betrachtet. Aufgrund einer eingehenderen Untersuchung von etwa 600 Exemplaren dieser Art, die sich alle in unserer Fliegen-sammlung befinden, konnte nachgewiesen werden, daß für die Fliegen der

im April-Mai fliegenden Frühjahrsgeneration ein einfarbig dunkelbraunes Stirndreieck sowie auffallend breite Thorax-Rückenstreifen bezeichnend sind, die manchmal auch miteinander verschmelzen können; Dorsalseite des Abdomens bei diesen Tieren immer dunkelbraun. In der Mitte des gelben, bzw. hellbraunen Stirndreiecks der Fliegen der von Juni bis Oktober fliegenden Sommer- und Herbstgeneration zieht sich ein dunkelbrauner Längsstreifen hin. Die Längsstreifen der Thorax-Rückenseite sind verhältnismäßig schmal, sie verschmelzen nie miteinander. Auf der Dorsalseite des Abdomens befinden sich braune Querstreifen. Die Fliegen der Frühjahrsgeneration sind im allgemeinen größer als die der Sommer-, bzw. Herbstgeneration. Die Genitalien der beiden Formen, die die oben erwähnten Unterschiede aufweisen, haben sich als vollkommen gleichgestaltet erwiesen. Dies beweist vermutlich, daß wir mit einer saisonbedingten infraspezifischen Variabilität zu tun haben.

Weiterhin gelang es mir in meinem Untersuchungsmaterial zwei für die Wissenschaft neue Arten der Gattung *Chlorops* aufzufinden. Die Holotypen und Paratypen der folgenden Arten sind im Ungarischen Naturwissenschaftlichen Museum in Budapest aufbewahrt.

### ***Chlorops habosae* sp. n.**

Stirn etwas breiter als lang. Stirndreieck etwa  $1/2$ mal so lang wie die Stirn. In der Mittellinie mit einem dunkelbraunen sich nach hinten verbreiternden, bis über die Vorderspitze reichenden Streifen, der in manchen Fällen fehlen kann. Ozellenfleck dunkelbraun. Occiput hinter den Ozellen und entlang des Augenrandes gelb, sonst dunkelbraun. Backen etwa 2mal so breit wie das 3. Fühlerglied. Augen rundlich. Kopfborsten rudimentär. Äußere Vertikalborsten länger als die inneren, die Postvertikalen und die Ozellaren, Orbitalen und Interfrontalen gleich und kürzer als die anderen Borsten. Fühler gelb. Arista braun. Taster und Rüssel gelb. Thorax gelb, Mesonotum mit 5 schwarzen, grau pubeszenten Längsstreifen, die mittleren von ihnen  $3/4$  so lang wie das Mesonotum. Mesonotum zwischen den Mittelstreifen und Scutellum braun. Schultern und Sternopleuren hellbraun, Mesopleuren und Hypopleuren dunkelbraun gefleckt. Mesopleuren nackt. Thorakalborsten: 1 schwache Humeralborste, 1 vordere und 1 oder 2 hintere Notopleuralborsten, 2 Postalarborsten und 1 Dorsozentralborste. Von den Scutellarborsten sind die apikalen 1,5mal so lang wie die lateralen. Postscutellum mattschwarz. Beine gelb, nur Schenkel etwas bräunlich, die letzten Tarsenglieder hellbraun. Flügel farblos. Adern hellbraun.  $t_a - t_p$  3—4mal so lang wie  $t_a$ . Abdomen gelb mit braunen Querbinden der 2—5. Tergite und einem medianen durchlaufenden Längsstreifen. Hypopygium gelb. Surstylus: Abb. 42.

Die Weibchen sind unbekannt.

Länge: Holotypus ♂: 3,5 mm, Paratypen ♂♂: 3,2—3,3 mm.



Holotypus ♂: »Bükk-hg. Nagymező«, »1956. VII. 1., leg. RESKOVITS«.

Paratypen: 2 ♂♂: Die Daten stimmen mit denen des Holotypus überein.

*Ch. babosae* sp. n. war früher als *Ch. geminata* MEIG. determiniert. Von dieser unterscheidet sie sich vor allem durch die Zeichnung des Stirndreiecks und Occiputs, die Breite der Backen, die Flecke der Pleuren, die Zeichnung des Abdomens und durch die Form der Surstylus.

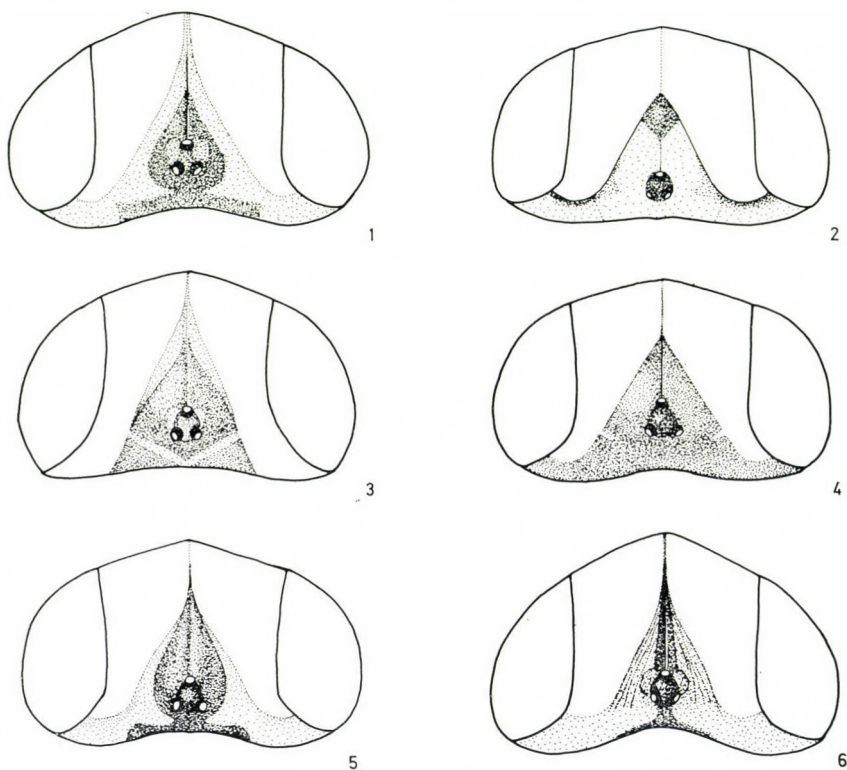


Abb. 1—6. Stirndreieck der *Chlorops* Arten. 1 = *Ch. socia* BECK., 2 = *Ch. rufina* ZETT., 3 = *Ch. meigeni* LOEW, 4 = *Ch. rossicus* SMIRNOV, 5 = *Ch. pannonica* STROBL, 6 = *Ch. finitima* BECK.

### *Chlorops signata* sp. n.

Stirn etwa so lang wie breit. Stirndreieck gelb, etwa  $\frac{2}{3}$  so lang wie die Stirn, erreicht nur als gelbe Linie den Stirnvorderrand. Stirndreieck in der Mitte mit einer dunkelbraunen, glänzenden, charakteristischen Zeichnung (Abb. 13). Ozellenfleck dunkelbraun. Occiput gelb mit zwei in einer Spitze endenden dunkelbraunen Flecken. Backen etwa 1,5mal so breit wie das 3. Fühlerglied. Augen rundlich. Kopfborsten rudimentär. Äußere Vertikalborsten länger als die inneren, die Postvertikalen und die Ozellaren. Orbitalen und Interfrontalen gleich lang, aber immer kürzer als die anderen Borsten.



Fühler gelb. Arista braun, nur das erste Glied gelb. Taster und Rüssel gelb. Thorax auch gelb, Mesonotum mit 5 schwarzgrauen pubeszenten Längsstreifen, der mittlere von ihnen  $\frac{2}{3}$  so lang wie das Mesonotum. Mesonotum zwischen Mittelstreifen und Scutellum braun. Mesopleuren dunkelbraun, Sternopleuren dunkelgelb gefleckt. Mesopleuren nackt. Thorakalborsten: 1 schwache Hume-

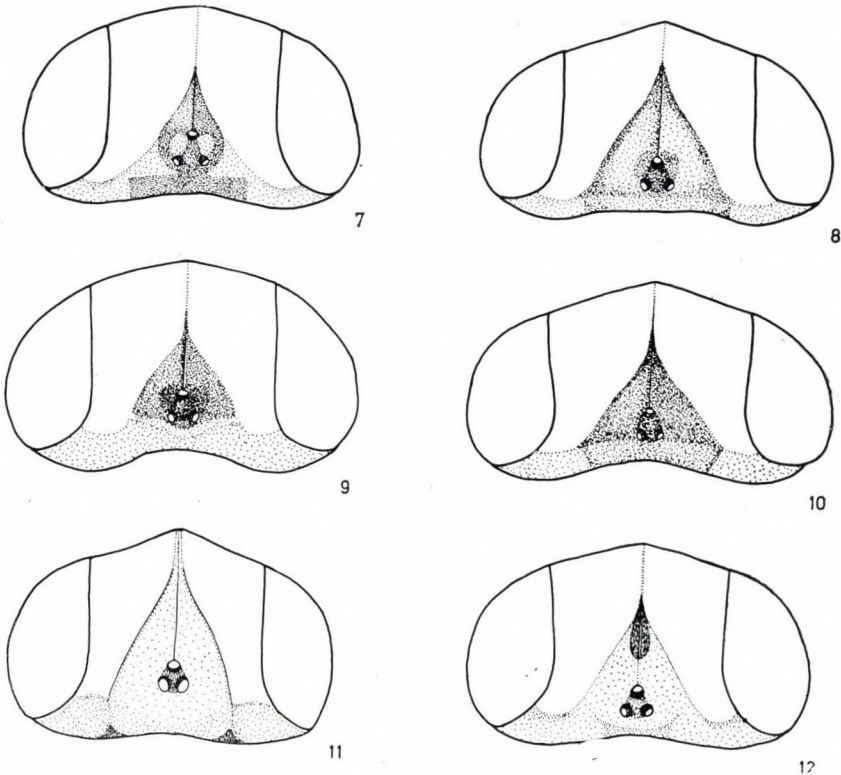


Abb. 7—12. Stirndreieck der *Chlorops* Arten. 7 = *Ch. fasciata* MEIG., 8 = *Ch. dasycera* LOEW, 9 = *Ch. horrida* BECK., 10 = *Ch. adjuncta* BECK., 11 = *Ch. interrupta* MEIG., 12 = *Ch. bipuncta* DUDA

ralborste, 1 vordere und 2 hintere Notopleuralborsten, 2 Postalarborsten und 1 Dorsozentralborste. Von den Scutellarborsten sind die apikalen 1,5mal so lang wie die lateralen. Postscutellum mattschwarz. Beine gelb. Flügel farblos. Adern hellbraun.  $t_a - t_p$  etwa 5mal so lang wie  $t_a$ . Abdomen gelb mit hellbraunen Hinterrandbinden der Tergite. Hypopygium gelb.

Länge: Holotypus ♂: 3,1 mm, Paratypus ♂: 3 mm, Paratypen ♀♀: 3,4—4,2 mm.

Holotypus ♂: »Csákvár, Hajdúvágás«, 1951. VI. 24., leg. MIHÁLYI.

Paratypen: 1 ♂: Bükk-Gebirge, Tardi-patak völgye, 2. VI. 1958, leg. S. TÓTH; 1 ♀: Budapest, Látóhegy, 16. VI. 1957, leg. Á. SOÓS; 1 ♀: Pilis-Gebirge, Dobogókő, 14. VI. 1957, leg. ZSIRKÓ; 1 ♀: Mátraszentlászló, 20. VI. 1959, leg. L. GOZMÁNY; 1 ♀: Vértes-Gebirge, Csákvár, Nagyvásár-h., 26. V. 1959, leg. G. ZSIRKÓ.

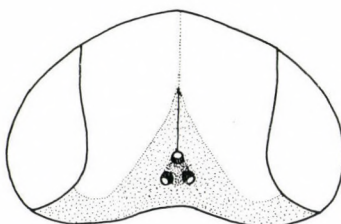
Diese neue Art war früher auch als *Ch. geminata* MEIG. determiniert. Von dieser Art läßt sie sich durch die charakteristische Zeichnung des Stirndreiecks und der Farbe des Abdomens gut unterscheiden.

### Bestimmungstabelle der europäischen Arten der Gattung *Chlorops* Meigen, 1803

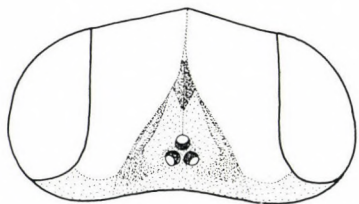
- 1 (1)  $mg_2$  kürzer als  $mg_3$  (Abb. 50). Stirndreieck mit 2 gelb gefensterten Flecken, sonst dunkelbraun, nur entlang der Seitenränder gelb. Das 3. Fühlerglied schwarz. Backen etwa 1,5mal so breit wie das 3. Fühlerglied. Mesonotum mit glänzenden Längsstreifen. Sternopleuren gelb gefleckt. 1,7 mm (Ungarn) **tectifrons** BECKER, 1910
- 2 (1)  $mg_2$  länger als  $mg_3$ .
- 3 (8) Vordere Metatarsen der Männchen höchstens 2mal so lang wie die anderen Tarsenglieder. Backenrand abgerundet (Abb. 56).
- 4 (5) Körperlänge 3,5–4 mm. Das 3. Fühlerglied rundlich. Backen etwa so breit wie das 3. Fühlerglied. Stirndreieck: Abb. 1 (Mitteleuropa) **socia** BECKER, 1912
- 5 (4) Körperlänge 2–3 mm. Das 3. Fühlerglied etwas verlängert und breiter als die Backen (Abb. 56).



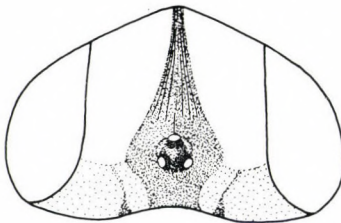
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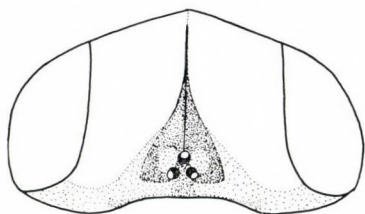
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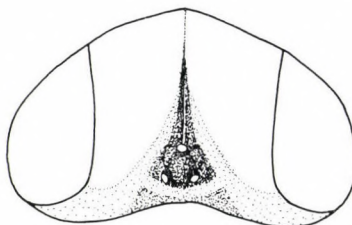
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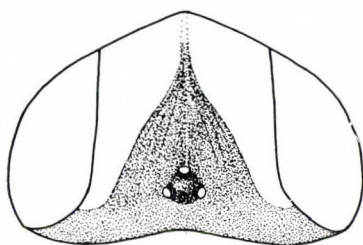
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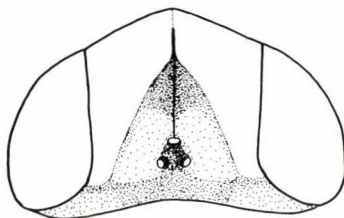
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Abb. 13–18. Stirndreieck der *Chlorops* Arten. 13 = *Ch. signata* sp. n., 14 = *Ch. gracilis* MEIG., 15 = *Ch. geminata* MEIG., 16 = *Ch. puncticornis* LOEW, 17 = *Ch. laeta* MEIG., 18 = *Ch. novaki* STROBL

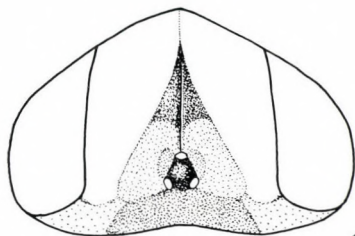
- 6 (7) Das 3. Fühlerglied schwarz. Stirndreieck mit einem medianen vorn zugespitzten und hinten abgerundeten schwarzen Fleck, oder das ganze Stirndreieck schwarz. Taster teilweise oder ganz braun. Körper mit schwarzer Behaarung. Abdomen hellbraun. Surstylus: Abb. 30–31. 2–3 mm (Paläarktische Region) **varsoviensis** BECKER, 1910
- 7 (6) Das 3. Fühlerglied gelb, nur an der Spitze schwarz. Stirndreieck immer mit einem medianen vorn zugespitzten und hinten abgerundeten schwarzen Fleck. Taster gelb. Körper mit gelber Behaarung. Abdomen gelb. Surstylus: Abb. 32–33. 2–3 mm (Ungarn) **pallidiventris** DUDA, 1933
- 8 (3) Vordere Metatarsen der Männchen immer mehr als 2mal so lang wie die anderen Tarsenglieder. Backenrand einen Winkel von weniger als 90° oder 90° oder mehr als 90° bildend.
- 9 (12) Mesonotum mit rotgelben Längsstreifen.
- 10 (11) Das 3. Fühlerglied gelb. Stirndreieck etwas über die Stirnmitte reichend. Vorder- spitze mit einem braunen Fleck (Abb. 2). Backen breiter als das 3. Fühlerglied. 2–2,5 mm (Paläarktische Region) **rufina** ZETTERSTEDT, 1848
- 11 (10) Das 3. Fühlerglied schwarz. Stirndreieck fast bis an den Stirnvorderrand reichend, ohne Fleck. Backen schmaler als das 3. Fühlerglied. 1,7 mm (Südeuropa) **lucens** BECKER, 1910
- 12 (9) Mesonotum mit schwarzen oder nur teilweise rotgelben Längsstreifen.
- 13 (16) Flügel braun. Mesonotum mit fettglänzenden Längsstreifen.
- 14 (15) Das 3. Fühlerglied teilweise gelb. Stirndreieck fast bis an den Stirnvorderrand reichend, hinten mit einem V-förmigen gelben Streifen (Abb. 3). Mesonotum mit miteinander



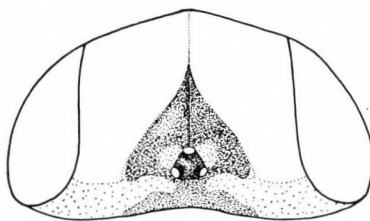
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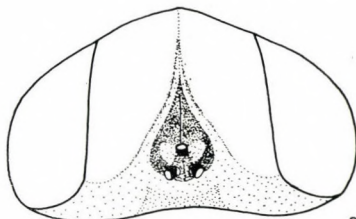
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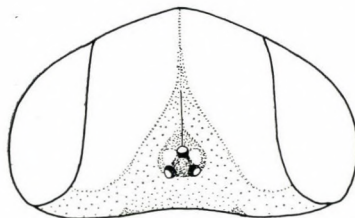
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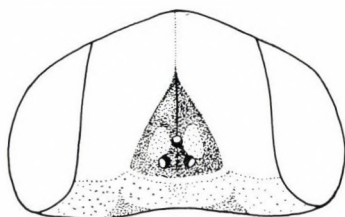
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Abb. 19–24. Stirndreieck der *Chlorops* Arten. 19 = *Ch. obscurella* ZETT., 20 = *Ch. anthracophagoidea* STROBL, 21 = *Ch. planifrons* LOEW, 22 = *Ch. bohémica* ZUSKA, 23 = *Ch. longipalpis* DUDA, 24 = *Ch. centromaculata* DUDA

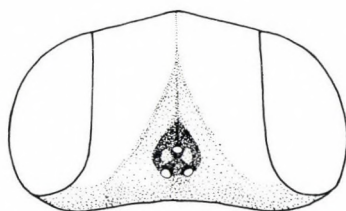


- nicht verschmelzenden und nicht bis zur Schulter reichenden Längsstreifen. Sternopleuren gelb gefleckt, nur am Oberrand braun. 3–3,5 mm (Paläarktische Region) **meigeni** LOEW, 1866
- 15 (14) Das 3. Fühlerglied schwarz. Stirndreieck etwa 2/3 so lang wie die Stirn, einfarbig, dunkelbraun, hinten ohne V-förmigen Streifen (Abb. 4). Mesonotum mit miteinander verschmelzenden und bis an die Schultern reichenden Längsstreifen. Sternopleuren schwarz gefleckt. 3–4 mm (Osteuropa) **rossicus** SMIRNOV, 1955
- 16 (13) Flügel farblos. Mesonotum mit matten oder glänzenden, aber nicht fettglänzenden Längsstreifen.
- 17 (22) Das 3. Fühlerglied länger als breit. Backenrand einen Winkel von weniger als 90° bildend.
- 18 (19) Kopf so lang wie hoch. Augen höher als lang. Von den Scutellarborsten sind die apikalen kürzer als 1/2 Scutellum. Abdomen dunkelbraun mit schwarzer Behaarung und Behorstellung. Stirndreieck: Abb. 5. 2,5–3,5 mm (Paläarktische Region) **pannonica** STROBL, 1893
- 19 (18) Kopf und Augen länger als hoch. Von den Scutellarborsten sind die apikalen länger als 1/2 Scutellum. Abdomen gelb oder teilweise braun mit teilweise gelber Behaarung und Behorstellung.
- 20 (21) Stirndreieck glatt, gelb mit einer medianen dunkelbraunen Längsfurche. Taster gelb. Mesonotum mit bis etwa zur Hälfte des Thorax reichenden mittleren rotgelben, nur vorn und am Ende schwarzen Längsstreifen. Sternopleuren gelb gefleckt. Abdomen gelb mit gelber Behaarung und teilweise gelber Behorstellung. 3–4 mm (Europa und Kleinasien) **pallidior** BECKER, 1912
- 21 (20) Stirndreieck mit mehreren Längsfurchen (Abb. 6). Taster teilweise braun. Mesonotum auf Scutellum übergehenden mattschwarzen, nur am Ende braunen mittleren Längsstreifen. Sternopleuren bräunlichgelb gefleckt. Abdomen mit braunen Querbinden der Tergite. Abdomen mit teilweise schwarzer Behaarung und Behorstellung. 3–4 mm (Europa und Kaukasien, Kasachstan, Kirgisien, Tadshikistan) **finitima** BECKER, 1910
- 22 (17) Das 3. Fühlerglied so lang wie breit. Backenrand einen Winkel von 90° oder mehr als 90° bildend.
- 23 (30) Die Behaarung des 3. Fühlergliedes länger als die Behaarung der Arista.
- 24 (25) Mesopleuren nackt. Mesonotum mit einem bis an das Scutellum reichenden mittleren Längsstreifen. Abdomen mit breiten braunen Querbinden der Tergite (Abb. 51). Fühlerglied gelb oder teilweise braun. Stirndreieck: Abb. 7. Surstylus: Abb. 41. 2,5–4 mm (Paläarktische Region) **fasciata** MEIGEN, 1830
- 25 (24) Mesopleuren behaart. Mesonotum mit einem auf das Scutellum übergehenden mittleren Längsstreifen. Abdomen braun, höchstens entlang des Seitenrandes gelb.
- 26 (27) Stirndreieck gelbbraun, entlang der Seitenränder braun (Abb. 8). Die Farbe des 3. Fühlergliedes von gelb bis hellbraun. Surstylus: Abb. 45. (Paläarktische Region) **dasycera** LOEW, 1866
- 27 (26) Stirndreieck dunkelbraun. Das 3. Fühlerglied schwarz.
- 28 (29) Stirndreieck hinten mit einem konvexen gelben Streifen (Abb. 9). Surstylus: Abb. 44. 3 mm (Mitteleuropa) **horrida** BECKER, 1910
- 29 (28) Stirndreieck hinten ohne Streifen (Abb. 10). Surstylus: Abb. 40. 3–3,5 mm (Mitteleuropa und Ural) **adjuncta** BECKER, 1910
- 30 (23) Die Behaarung des 3. Fühlergliedes kürzer als die Behaarung der Arista.
- 31 (46) Das 3. Fühlerglied gelb, höchstens an der Spitzengegend oder um den Ansatzpunkt der Arista braun.
- 32 (33) Stirndreieck auffällig groß, bis an den Stirnvorderrand reichend (Abb. 11). Das 3. Fühlerglied gelb. Backen mehr als 1,5mal so breit wie das 3. Fühlerglied. Mesonotum mit veränderlich gefärbten Längsstreifen. Sternopleuren gelb gefleckt. Rückenseite des Abdomens mit hellbraunen Querbinden der Tergite und einem medianen, hellen, durchlaufenden Längsstreifen. 3–5 mm (Europa, Baschkirische ASSR und Aserbaidshan) **interrupta** MEIGEN, 1830
- 33 (32) Stirndreieck nicht auffällig groß, etwa 1/2 so lang wie die Stirn, erreicht nur als eine gelbe Linie den Stirnvorderrand.
- 34 (37) Mesonotum mit glänzenden Längsstreifen. Das 3. Fühlerglied an der Spitzengegend oder um den Ansatzpunkt der Arista braun. Sternopleuren braun gefleckt.
- 35 (36) Stirndreieck in der Vorderspitze mit einem kleinen schwarzen Fleck (Abb. 12). Abdomen einfarbig gelb. 3 mm (Europa) **bipuncta** DUDA, 1933
- 36 (35) Stirndreieck gewöhnlich mit einem vorn spitzen, hinten abgerundeten schwarzen, gelb gefensterten Fleck. Abdomen mit unregelmäßigen, dunkelbraunen Querbinden der

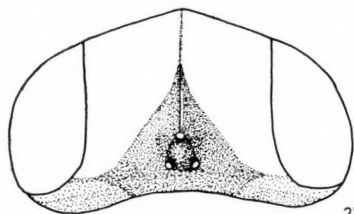
- Tergite. Surstylus: Abb. 34–35. 2–4 mm (= *bisignata* BECKER, 1912) (Paläarktische Region)  
*scalaris* MEIGEN, 1830
- 37 (34) Mesonotum mit matten Längsstreifen. Das 3. Fühlerglied gelb. Sternopleuren gelb oder teilweise gelb gefleckt.
- 38 (43) Körperlänge 2,5–4 mm.
- 39 (40) Stirndreieck gewöhnlich mit schwarzer medianer Linie. Abdomen mit schmalen, braunen Querbinden der Tergite. 3 mm (Paläarktische Region)  
*figurata* ZETTERSTEDT, 1848
- 40 (39) Stirndreieck und Abdomen mit anderer Färbung und Zeichnung.
- 41 (42) Backen höchstens so breit wie das 3. Fühlerglied. Abdomen gelb. Stirndreieck: Abb. 13. 3–4 mm (Ungarn)  
*signata* sp. n.
- 42 (41) Backen mindestens 2mal so breit wie das 3. Fühlerglied. Abdomen mit schmalen, schwarzen Querbinden der Tergite und einem medianen schwarzen durchlaufenden Längsstreifen. Stirndreieck mit veränderlicher Färbung und Zeichnung. Surstylus: Abb. 42. 3–3,5 mm (Ungarn)  
*babosae* sp. n.
- 43 (38) Körperlänge 4–6 mm.
- 44 (45) Stirndreieck etwa bis zur Stirnmitte reichend, gelb mit medianem, gelbem oder bräunlichgelbem Längsstreifen (Abb. 14). Mesonotum gelb behaart. Abdomen gelb. 4–6 mm (Paläarktische Region)  
*gracilis* MEIGEN, 1830
- 45 (44) Stirndreieck über die Stirnmitte reichend, in der Vorderspitze mit einem dunkelbraunen Fleck und gewöhnlich mit einem medianen, weißlichgelben, glatten Mittelfeld (Abb. 15). Mesonotum weiß behaart. Abdomen mit braunen Querbinden der Tergite und einem medianen, hellen durchlaufenden Längsstreifen. Surstylus: Abb. 53. 4–5 mm (Europa und Asien)  
*geminata* MEIGEN, 1830



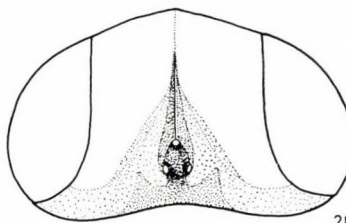
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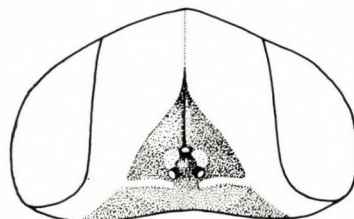
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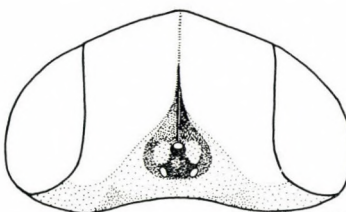
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Abb. 25–30. Stirndreieck der *Chlorops* Arten. 25 = *Ch. ringens* LOEW, 26 = *Ch. hypostigma* MEIG., 27 = *Ch. pumilionis* BJERK. (Frühjahrgeneration), 28 = *Ch. pumilionis* BJERK. (Sommer- und Herbstgeneration), 29 = *Ch. brevimana* LOEW, 30 = *Ch. serena* LOEW



- 46 (31) Das 3. Fühlerglied dunkelbraun oder schwarz, höchstens an der Wurzel gelb oder hellbraun.
- 47 (52) Stirndreieck mit mehreren Längsfurchen.
- 48 (49) Stirndreieck etwas über die Stirnmitte reichend, gelb, nur Ozellenfleck braun. Abdomen gelb mit braunen Querbinden der Tergite. 3 mm (Mitteleuropa)  
**pallifrons** STROBL, 1909
- 49 (48) Stirndreieck den Stirnvorderrand erreichend.
- 50 (51) Stirndreieck hellbraun etwa  $1/2$  so breit wie die Stirn (Abb. 16). Scutellum gelb. Sternopleurfleck gelb, nur am Oberrande dunkelbraun. Abdomen mit schmalen gelben Querbinden der Tergite. 3,5–4,5 mm (Süd- und Mitteleuropa)  
**puncticornis** LOEW, 1866
- 51 (50) Stirndreieck dunkelbraun, mehr als  $2/3$  so breit wie die Stirn (Abb. 19). Scutellum teilweise braun. Sternopleurfleck braun, Rückenseite des Abdomens einfarbig braun (Mitteleuropa)  
**obscura** ZETTERSTEDT, 1848
- 52 (47) Stirndreieck glatt.
- 53 (54) Mesopleuren behaart. Stirndreieck mit hinten eckigem schwarzen Fleck (Abb. 17). Beine braun gefleckt. 3–4 mm (Europa und Kasachstan)  
**laeta** MEIGEN, 1830
- 54 (53) Mesopleuren nackt.
- 55 (60) Arista gelblichweiß, auffallend lang und dick.
- 56 (59) Stirndreieck in der Vorderspitze mit einem großen dunklen Fleck.
- 57 (58) Die Seitenränder des Stirndreiecks konvex (Abb. 20). Backen schmaler als das 3. Fühlerglied. Taster schwarz. Beine braun gefleckt. 2,5–3 mm (Europa)  
**anthracophagoidea** STROBL, 1909
- 58 (57) Die Seitenränder des Stirndreiecks fast gerade (Abb. 21). Backen breiter als das 3. Fühlerglied. Taster gelb. Beine außer Tarsenglieder gelb. 2,5–3,5 mm (Paläarktische Region)  
**planifrons** LOEW, 1866
- 59 (56) Stirndreieck mit einem Fleck vor den Ozellen. Taster an der apikalen Hälfte schwarz.

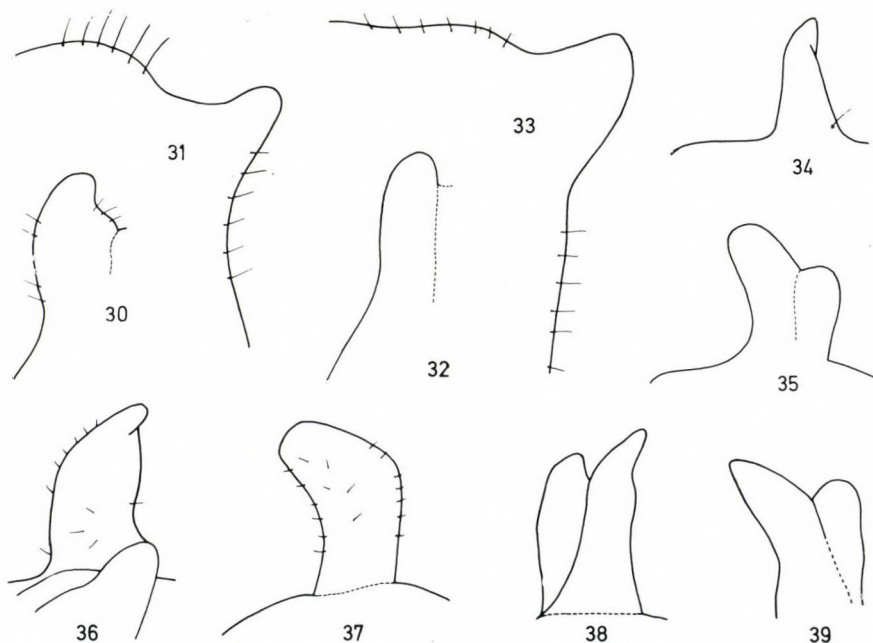


Abb. 30–39. Surstylus der *Chlorops* Arten. 30–31. *Ch. varsoviensis* BECK., 30 = Ventralansicht, 31 = Lateralansicht; 32–33. *Ch. pallidiventris* DUDA, 32 = Ventralansicht, 33 = Lateralansicht; 34–35. *Ch. scalaris* MEIG., 34 = Ventralansicht, 35 = Lateralansicht; 36–37. *Ch. pumilionis* BJERK., 36 = Ventralansicht, 37 = Lateralansicht; 38–39. *Ch. ringens* LOEW, 38 = Ventralansicht, 39 = Lateralansicht



- Sternopleuren gelb gefleckt. Beine gelb. 5 mm (Europa, Burjatische und Jakutische ASSR)  
**zernyi DUDA, 1933**
- 60 (55) Arista gelbbraun oder dunkelbraun, nie auffallend lang und dick.  
 61 (80) Mesonotum mit glänzenden Längsstreifen.  
 62 (71) Taster auffallend lang und dick.  
 63 (66) Sternopleuralfleck schwarz.  
 64 (65) Stirn breiter als lang. Stirndreieck dunkelbraun, fast so lang wie breit (Abb. 22). Arista dicht pubeszent. Mesonotum mit auffällig glänzenden Längsstreifen. Abdomen mit dunklen Querbinden der Tergite. 3–4 mm (Mitteleuropa)  
**bohémica ZUSKA, 1960**
- 65 (64) Stirn etwa so breit wie lang. Stirndreieck schmaler als lang, entlang der Seitenränder gelb (Abb. 23). Arista nicht dicht pubeszent. Mesonotum mit nicht auffällig glänzenden Längsstreifen. Abdomen einfarbig gelb. 3 mm (Mitteleuropa)  
**longipalpis DUDA, 1933**
- 66 (63) Sternopleuralfleck gelb, höchstens am Oberrand dunkelbraun.  
 67 (68) Sternopleuralfleck gelb. Stirndreieck nur im Umkreis der Ozellen mit einem kleinen braunen, gelb gefensterten Fleck (Abb. 24). Taster gelb. Backen etwas breiter als das 3. Fühlerglied. Abdomen mit hellbraunen Querbinden der Tergite. 3 mm (Süd- und Mitteleuropa)  
**centromaculata DUDA, 1933**
- 68 (67) Sternopleuralfleck am Oberrand braun.  
 69 (70) Backen so breit wie das 3. Fühlerglied. Taster an der apikalen Hälfte braun. Mesonotum mit auffällig glänzenden Längsstreifen. Abdomen mit schmalen dunklen Querbinden der Tergite. 2–3 mm (Osteuropa)  
**palpata SMIRNOV, 1958**
- 70 (69) Backen etwa 1,5mal so breit wie das 3. Fühlerglied. Taster gelb. Mesonotum mit nicht auffällig glänzenden Längsstreifen. Abdomen mit breiten dunklen Querbinden der Tergite. Stirndreieck: Abb. 25. Surstylus: Abb. 38–39. 3 mm (Paläarktische Region)  
**ringens LOEW, 1866**
- 71 (62) Taster normal lang und dick.  
 72 (75) Körperlänge 3–5,5 mm. Mesonotum mit oft verschmelzenden Längsstreifen.

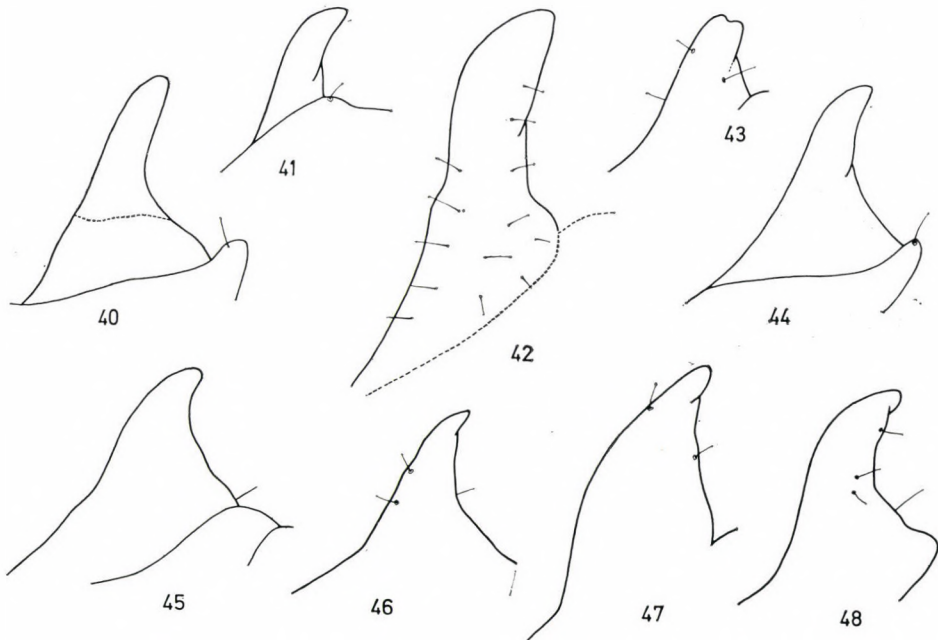


Abb. 40–48. Ventralansicht der Surstylus der *Chlorops* Arten. 40 = *Ch. adjuncta* BECK., 41 = *Ch. fasciata* MEIG., 42 = *Ch. babosae* sp. n., 43 = *Ch. pannonica* STROBL, 44 = *Ch. horrida* BECK., 45 = *Ch. dasycera* LOEW, 46 = *Ch. calceata* MEIG., 47 = *Ch. serena* LOEW, 48 = *Ch. novaki* STROBL

- 73 (74) Stirndreieck nicht auffallend groß, braun, entlang der Seitenränder und der Mittellinie dunkelbraun. Backen etwas breiter als das 3. Fühlerglied. Abdomen mit gelben Querbinden der Tergite. Surstylus: Abb. 54. 3–5,5 mm (= *brunnipes* ZETTERSTEDT, 1848) (Europa) **speciosa** MEIGEN, 1830
- 74 (73) Stirndreieck auffallend groß, dunkelbraun. Backen so breit wie das 3. Fühlerglied. Abdomen dunkelbraun mit gelben Seitenränder. 3–4 mm (= *freyi* DUDA, 1933) (Paläarktische Region?) **scutellaris** ZETTERSTEDT, 1848
- 75 (72) Körperlänge 1,5–2,5 mm. Mesonotum mit nie verschmelzenden Längsstreifen.
- 76 (77) Stirndreieck im Umkreis der Ozellen mit einem kleinen schwarzen Fleck (Abb. 26). Backen schmäler als das 3. Fühlerglied. Mesonotum mit etwas über die Thoraxmitte reichenden mittleren Längsstreifen. Abdomen gelb. 1,5–2 mm (Europa und Kaukasien) **hypostigma** MEIGEN, 1830
- 77 (76) Stirndreieck einfarbig schwarz. Backen so breit oder noch breiter als das 3. Fühlerglied. Mesonotum mit bis Scutellum reichenden mittleren Längsstreifen. Abdomen ganz oder teilweise braun.
- 78 (79) Stirndreieck hinten mit einem konvexen gelben Streifen (Abb. 55). Backen etwa so breit wie das 3. Fühlerglied. Abdomen mit braunen Querbinden der Tergite und einem medianen durchlaufenden Längsstreifen. Surstylus: Abb. 46. 2 mm (Europa und Baikalsee) **calceata** MEIGEN, 1830
- 79 (78) Stirndreieck hinten ohne Streifen. Backen schmäler als das 3. Fühlerglied. Abdomen außer den Seitenrändern dunkelbraun. Surstylus: Abb. 52. 2–2,5 mm (Paläarktische Region) **troglodytes** ZETTERSTEDT, 1848
- 80 (61) Mesonotum mit matten Längsstreifen
- 81 (82) Taster auffällig lang und dick. Sternopleurfleck schwarz. Abdomen mit braunen Querbinden der Tergite. 3,5–4 mm (Osteuropa und Kasachstan) **crassipalpis** SMIRNOV, 1958
- 82 (81) Taster normal lang und dick.
- 83 (90) Sternopleuren schwarz gefleckt.
- 84 (87) Sternopleurfleck matt.
- 85 (86) Mesonotum mit auffällig breiten, fast verschmelzenden auch Schultern und Scutellum erreichenden Längsstreifen. Stirndreieck dunkelbraun (Abb. 27). Rückenseite der Abdomen einfarbig braun. Surstylus: Abb. 36–37. 2–4 mm (= *taeniopus* MEIGEN, 1830) (Siehe auch unter Nummer 86) (Paläarktische Region) **pumilionis** (BJERKANDER, 1778) (Frühjahrsgeneration)

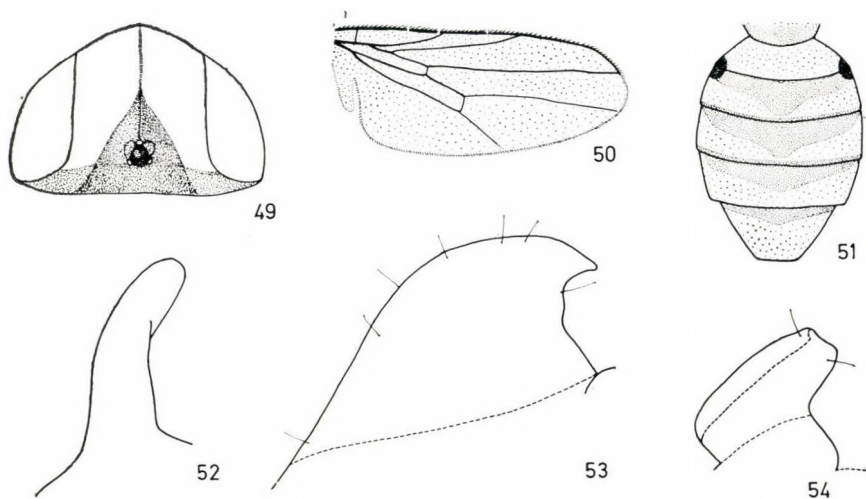


Abb. 49–54. 49 = Stirndreieck der *Chlorops troglodytes* ZETT., 50 = Flügel der *Ch. tectifrons* BECK., 51 = Abdomen der *Ch. fasciata* MEIG.; 52–54. Ventralansicht der Surstylus, 52 = *Ch. troglodytes* ZETT., 53 = *Ch. geminata* MEIG., 54 = *Ch. speciosa* MEIG.



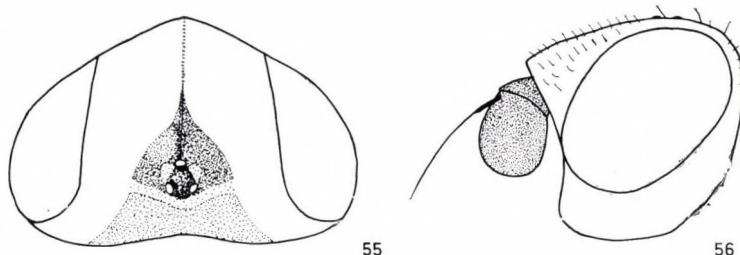


Abb. 55–56. 55 = Stirndreieck der *Chlorops calceata* MEIG. 56 = Kopf der *Ch. varsoviensis* BECK.

- 86 (85) Mesonotum mit nicht auffällig breiten und nie verschmelzenden Schultern und Scutellum erreichenden Längsstreifen. Stirndreieck mit medianen braunen Längsstreifen (Abb. 28). Abdomen mit braunen Querbinden der Tergite. Surstylus: Abb. 36–37. 2–4 mm (= *taeniopus* MEIGEN, 1830) (Siehe auch unter Nummer 85) (Paläarktische Region)
- pumilionis** (BJERKANDER, 1778) (Sommer- und Herbstgeneration)
- 87 (84) Sternopleurfleck glänzend.
- 88 (89) Stirndreieck dunkelbraun, hinten mit einem hinter den Ozellen gebrochenen, gelben Streifen (Abb. 29). Taster gelb. Vordermetatarsen der Männchen etwas verkürzt. 2,5–3 mm (Europa und Kasachstan) **brevimana** LOEW, 1866
- 89 (88) Stirndreieck mit einem weidenblattförmigen Fleck. Taster an der apikalen Hälfte braun. Vordermetatarsen der Männchen nicht verkürzt. 3–3,5 mm (Osteuropa Karelrien) **nigripalpis** DUDA, 1933
- 90 (93) Sternopleuren gelb oder teilweise braun gefleckt.
- 91 (92) Sternopleurfleck matt. Stirndreieck: Abb. 18. Surstylus: Abb. 48. 3–4 mm (Paläarktische Region) **novaki** STROBL, 1902
- 92 (91) Sternopleurfleck glänzend.
- 93 (94) Stirndreieck mit gelb gefenstertem Fleck (Abb. 30). Sternopleuren gelb gefleckt. Abdomen mit braunen Querbinden der Tergite. Surstylus: Abb. 47. 3–4 mm (Europa) **serena** LOEW, 1866
- 94 (93) Stirndreieck ohne gefensterten Fleck. Seitenränder der Sternopleurflecke braun. Abdomen gelb. 3–4 mm (Osteuropa, Mongolei und Altai-Gebirge) **riparia** SMIRNOV, 1958

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## GEOMETRIDAE (LEPIDOPTERA) COLLECTED BY DR. J. SZUNYOGHY IN TANZANIA\*

By

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(Received 1 November, 1976)

The identification of 2500 Geometrid specimens representing 238 species, the description of 22 new species (4 Geometrinae, 4 Sterrhinae, 5 Larentiinae — including 4 *Eupithecia* — 9 Ennominae) and of 1 new subspecies, the synonymy of 8 specific names and one new combination. The material derives from the collection of Dr. J. SZUNYOGHY, Hungarian Natural History Museum, and to a lesser part from the British Museum (Natural History).

The Geometridae studied in the present paper are from a collection of about 20,000 Lepidoptera made by the late Dr. JÁNOS SZUNYOGHY, the mammalogist with the Third Hungarian Zoological Expedition to Tanzania, 1965—1966. A narrative of the expedition was published by SZUNYOGHY in 1967 and the following notes on his collecting stations are derived from that source and from a paper published by Dr. GOZMÁNY in 1969.

Dr. SZUNYOGHY collected at two stations on Mount Meru, an extinct volcano of nearly 15,000 ft. The lower station was on the eastern slope of the mountain at 5,700 ft; the higher was at Olkokola at 8,700 ft on the western slope. The vegetation of both localities was described by Dr. SZUNYOGHY as medium to high forest.

Much material was also collected at the Usa River settlement at the foot of Mount Meru on its SEE side at an elevation of 3,900 ft, 15 miles east of Arusha. The district is partially cultivated with areas of coffee and banana plantations, some riverine forest and savannah. The settlement served as Dr. SZUNYOGHY's expedition headquarters.

Specimens collected by Dr. SZUNYOGHY at four other stations, not on Mount Meru, have also been included in this study. Lakes Manyara and Sereri each at 3,150 ft and respectively 72 and 80 miles west of the Usa River are situated in dry savannah country. A locality in secondary forest near Katesh at an elevation of 5,900 ft on the Mbulu highland, 182 miles south-west of the Usa River and Rungwa at 4,250 ft, 410 miles south-west of the Usa River in "Miombo" forest, characteristic of Tanzania.

Relevant material from the collection of the British Museum (Natural History) has also been included.

\* The Scientific Results of Hungarian Zoological Expeditions to Tanzania. No. 12.

The collection consists of nearly 2500 specimens representing 238 species; 22 new species and one new subspecies are described and 80 species are recorded from Tanzania for the first time. In addition, as a result of the study of the collection and of relevant type-specimens, eight specific names are newly placed in synonymy and one is given a new combination.

The colour names used in the descriptions, where followed by plate numbers, are taken from the METHUEN Handbook of Colour (1967). The wing measurements represent the range from the smallest to the largest example of each sex; the measurement is of the forewing from mid-thorax to apex. The half-tone illustrations of the moths and of the genitalia have been prepared from photographs taken by Mr. J. BROWN and Mr. P. YORK of the Photographic Unit of the British Museum (Natural History). Unless otherwise stated, all the specimens are in the Hungarian National Museum of Natural History, Budapest. DR. L. A. GOZMÁNY of the Hungarian National Museum does intend, however, to deposit in the BMNH paratypes of those species described solely from the SZUNYOGHY collection, after the publication of this paper.

In recording previously described species in this paper the original reference is cited and additional references are given to works in which the species has been figured; references cited in abbreviated form in the text and in the synonymy are listed in full at the end of this paper. The previously known distribution of each species is also listed. Species described for the first time are illustrated on the accompanying plates.

The Lepidoptera of Mount Meru have been little collected and the literature relating to the faune and to the Heterocera fauna of the East African mountains is scant. AURIVILLIUS (1910) recorded the first collections from Mount Meru; MEYRICK (1920) and PROUT (1932a) described many new taxa from neighbouring Kilimandjaro, the Aberdare Range and Mount Kenya; HAMPSON (1909), COLLENETTE (1939) and COLLENETTE, FLETCHER and KIRIAKOFF (1958—1968) described new taxa from Ruwenzori and from the mountains of East Africa; FLETCHER (1958a, 1958b, 1962, 1963) described new taxa from Kilimandjaro, the mountains of East Africa and from Ruwenzori; BRADLEY (1965) and GOZMÁNY (1966) described many new Microlepidoptera from Ruwenzori and from the mountains of East Africa and GOZMÁNY (1969) has published on the Tineidae of Tanzania.

It is evident from the wide range of fragmentary material from Kilimandjaro and from Meru that remains undescribed, that systematic collecting at the higher elevations, from 8,000 ft upwards would reveal a rich and varied fauna.



## Geometridae

## OENOCHROMINAE

*Afrophyla vethi vethi* (SNELLEN)

*Panagra vethi* SNELLEN, 1886, Tijdschr. Ent., **29**: 139, pl. 6, Figs. 1—9.

*Afrophyla dichordata* WARREN, 1895, Novit. zool., **2**: 83.

*Afrophyla vethi* (SNELLEN); PROUT, 1929, in: SEITZ, **16**: 3, pl. 1a.

*Afrophyla vethi* (SNELLEN); JANSE, 1935, **2** (3): 406, text-fig. 123, pl. 15, fig. 11.

Usa River, 3900 ft, 28. IV. 1965, 1 ♂: *ibid.*, IX. 1965 — II. 1966, 3 ♂. Katesh, 5900 ft, 30. V. 1965, 1 ♂.

Distribution. Senegal, Sierra Leone, Angola, Zaire, Uganda, Kenya, Tanzania, Malawi. Represented in Madagascar by subsp. *meloui* PROUT (1929).

*Derambila hyperphyes* (PROUT)

*Corium hyperphyes* PROUT, 1911, Ann. Mag. nat. Hist., (8) **8**: 704.

*Derambila hyperphyes* (PROUT); PROUT, 1929, in: SEITZ, **16**: 5, pl. 1b.

E. slope of Mt Meru, 5700 ft, 21. I. — 1. II. 1966, 1 ♂, 20 ♀. W. slope of Mt Meru, Olkokola, 8700 ft, 6.—27. XII. 1965, 1 ♂, 4 ♀.

Distribution. Kenya, Malawi.

*Derambila sjoestedti* AURIVILLIUS

*Derambila sjoestedti* AURIVILLIUS, 1910, in: SJÖSTEDT: Wiss. Ergebn. schwed. zool. Expdn. Kilimandjaro Meru 1905—1906, **9** (Lepid.): 41, pl. 2, fig. 21.

W. slope of Mt Meru, Olkokola, 8700 ft, 6.—27. XII. 1965, 4 ♀.

Distribution. Tanzania, Mt Meru.

*Ozola pulverulenta* WARREN

*Ozola pulverulenta* WARREN, 1897, Novit. zool., **4**: 30.

*Ozola pulverulenta* WARREN; PROUT, 1929, in: SEITZ, **16**: 7, pl. 1c (poor figure).

*Ozola pulverulenta* WARREN; JANSE, 1935, **2** (4): 417, text-fig. 128, pl. 10, fig. 19, pl. 15, fig. 22.

Katesh, 5900 ft, 27—30. VI. 1965, 2 ♀.

Distribution. S. Africa, Zululand, Natal, Transvaal, Rhodesia.

## GEOMETRINAE

*Pingasa ruginaria communicans* (WALKER)

*Hypochroma communicans* WALKER, 1860, List Specimens lepid. Insects Colln Br. Mus., **21**: 430.

*Pingasa ruginaria* (GUENÉE) f. *communicans* (WALKER); JANSE, 1935, **2** (3): 256, text-fig. 70, pl. 11, fig. 3.

Usa River, 3900 ft, 14. VIII. 1965, 1 ♂.

Distribution. S. Africa, Natal. *P. ruginaria* (GUENÉE, 1857) is represented by subspecies in other parts of tropical Africa, the Mascarene and Oriental regions.

*Pingasa distensaria distensaria* (WALKER)

*Hypochroma distensaria* WALKER, 1860, List Specimens lepid. Insects Colln Br. Mus., **21**: 444.

*Hypochroma respondens* WALKER, 1860, *ibid.*, **21**: 428.

*Pingasa abyssiniaria* GUENÉE sensu JANSE, 1935, **2** (3): 258, text-fig. 70, pl. 11, fig. 5.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 2 ♂.

Distribution. Uganda, Kenya, Rhodesia, S. Africa. Represented in Fernando Po by subsp. *delotypa* PROUT (1935).

*Comibaena leucospilata* (WALKER)

*Geometra leucospilata* WALKER, [1863] 1962, List Specimens lepid. Insects Colln Br. Mus., **26**: 1554.

*Racheopsila coryphata* FELDER and ROGENHOFER, 1875, Reise öst. Fregatte Novara (Zool.) **2** (Abt. 2): pl. 127, fig. 10.

*Comibaena leucospilata* (WALKER); PROUT, 1930, in: SEITZ, **16**: 14, pl. 2e.

*Comibaena leucospilata* (WALKER); JANSE, 1935, **2** (3): 274, text-fig. 77, pl. 12, fig. 1.

Lake Manyara, 3150 ft, 20. V. 1965, 1 ♀. Usa River, 3900 ft, 20. IV.—1. V. 1965, 2 ♂; ibid., IX. 1965—II. 1966, 1 ♂.

Distribution. E. Africa, S. Sudan to Natal.

#### ***Lophorrhachia aenospila* (BETHUNE-BAKER)**

*Prasinocyma aenospila* BETHUNE-BAKER, 1913, Ann. Mag. nat. Hist., (8) **11**: 570.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 5 ♂.

Distribution. Tanzania, Malawi, Angola, Cameroun.

In four of the examples from Mt Meru abdominal segments 2—4, including the crests, are dorsally vinaceous irrorate with black; in three of these examples there is a similarly coloured spot on the hindwing at one-third anal margin and in one, a small dark spot at the tornus of the forewing.

The genitalia of the Meru specimens are identical with those of the holotype of *aenospila* and also with those of *L. rathyma* PROUT (1938, in: SEITZ, **16**: 122), which PROUT thought might prove to be a subspecies of *aenospila*.

#### ***Thalassodes quadraria* GUENÉE**

*Thalassodes quadraria* GUENÉE, 1857, in: BOISDUVAL and GUENÉE, Hist. nat. Insectes, Spec. gén. Lépid., **9**: 360.

*Geometra digressa* WALKER, 1861, List Specimens lepid. Insects Colln Br. Mus., **22**: 513. Syn. n.

*Thalassodes digressa* WALKER; PROUT, 1930, in: SEITZ, **16**: 21, pl. 2h.

*Thalassodes digressa* WALKER; JANSE, 1935, **2** (3): 287, text-fig. 83, pl. 12, fig. 8 and additional synonymy.

Usa River, 3900 ft, 22. IV.—20. V. 1965, 2 ♂, 2 ♀; IX. 1965—II. 1966, 1 ♀; 1965, 1 ♂.

Distribution. Africa, south of the Sahara, Mascarene region.

*T. quadraria* was described by GUENÉE from two specimens which he thought might have been collected in Central India or in Australia. Examination of the genitalia of the female lectotype, designated below, shows it to be conspecific with the widely distributed Ethiopian and Mascarene species previously known as *Thalassodes digressa* (WALKER).

Lectotype ♀: Ex Musaeo Ach. Guenée; Ex Typicalibus Speciminibus: *Quadraria* GN. black/white outline fig. 3222 (OBERTHÜR, 1916, Études Lépid. comparée **12**: 82—83, pl. 384, fig. 3222); Geometridae genitalia slide No. 4066.

#### ***Prasinocyma angolica* PROUT**

*Prasinocyma simiaria angolica* PROUT, 1930, in: SEITZ, Macrolepid. World, **16**: 22.

*Prasinocyma angolica* PROUT; FLETCHER, 1955, Explor. Parc natn. Upemba Mission G. F. de Witte 1946—9, Fasc. **32**: 80.

Usa River, 3900 ft, IX. 1965—II. 1966, 3 ♂.

Distribution. Angola, Zaire, Uganda, Kenya, Tanzania, Malawi.

#### ***Prasinocyma scissaria degenerata* PROUT**

*Prasinocyma degenerata* PROUT, 1913, Novit. zool., **20**: 420.

*Prasinocyma scissaria degenerata* PROUT; FLETCHER, 1958, Ruwenzori Expedn 1952, **1** (6): 82.

Lake Sereri, 3150 ft, 20.—27. VIII. 1965, 3 ♂; ibid., 23—27. IX. 1965, 7 ♂, 1 ♀. Lake Manyara, 3150 ft, 10. VI. 1965, 2 ♂. Usa River, 3900 ft, 19. IV.—18. V. 1965, 3 ♂; ibid., IX. 1965—II. 1966, 1 ♂.

Distribution. East Africa, Ethiopia to Tanzania.

#### ***Prasinocyma panchlora* PROUT ? ssp.**

*Prasinocyma panchlora* PROUT, 1913, Novit. zool., **20**: 420.

*Prasinocyma panchlora* PROUT; PROUT 1930, in: SEITZ, **16**: 22, pl. 3d.

*Prasinocyma panchlora* PROUT; JANSE, 1935, **2** (3): 293, text-fig. 85, pl. 14, fig. 19.

W. slope of Mt Meru, Olkokola, 8700 ft, 18. VII. 1965, 1 ♂; ibid., 6.—27. XII. 1965, 1 ♀.

Distribution. S. Africa, Cape Province and Orange Free State, Tanzania.

The Olkokola specimens are from a higher elevation than any others studied and perhaps for that reason are larger. The South African specimens and the single Tanzanian



specimen from Songea have a forewing measurement of 12.5–16 mm in the male and 14–32 mm in the female.

The forewing of the Olkokola male measures 16 mm and that of the female 17.5 mm. The male genitalia are identical with those of the holotype; those of the female have a rather longer sclerotized ductus bursae, which in the South African specimens is one-half as long as the width of the corpus bursae; in the Olkokola specimen it is three-fourths as long.

***Prasinocyma pictifimbria* WARREN**

*Prasinocyma pictifimbria* WARREN, 1904, Novit. zool., **11**: 465.

*Prasinocyma pictifimbria* WARREN; PROUT, 1930, in: SEITZ, **16**: 22, pl. 3d.

Usa River, 3900 ft, 23. V. 1965, 1 ♀; *ibid.*, IX. 1965–II. 1966, 1 ♂.

Distribution. E. Africa, Ethiopia to Transvaal, Uganda, Zaire, Angola.

***Prasinocyma neglecta* PROUT**

*Prasinocyma neglecta* PROUT, 1921, Bull. Hill Mus. Witley **1** (1): 138, fig. 17.

*Prasinocyma neglecta* PROUT; PROUT, 1930, in: SEITZ, **16**: 24, pl. 3e.

Lake Manyara, 3150 ft, 16. VI. 1965, 1 ♀.

Distribution. E. Africa, Ethiopia to Transvaal, Uganda, Rwanda, Zaire.

***Prasinocyma trifilifimbria uniformata* FLETCHER**

*Prasinocyma trifilifimbria uniformata* FLETCHER, 1958, Ruwenzori Expedn 1952, **1** (6): 84, figs. 102–104.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 2 ♀.

Distribution. Kenya, Tanzania.

***Prasinocyma pulchraria* SWINHOE**

*Prasinocyma pulchraria* SWINHOE, 1904, Trans. ent. Soc. Lond., **1904**: 544.

*Prasinocyma pulchraria* SWINHOE; PROUT, 1930, in: SEITZ, **16**: 24, pl. 3e.

Usa River, 3900 ft, IX. 1965–II. 1966, 1 ♂. Katesh, 5900 ft, 28.—30. VI. 1965, 2 ♂.

Distribution. Kenya, Malawi, Transvaal.

***Prasinocyma croca* sp. n.**

(Pl. 1, fig. 3; Pl. 4, figs. 32–35)

Frons greyish green, cinnamon brown immediately below antennae. Head greyish green, slenderly white anteriorly between antennae. Thorax and abdomen greyish green. Upperside. Forewing greyish green (Pl. 26, B3) lightly striate with white; discal spot black ringed with greyish rose (Pl. 10, B6); cilia greyish green proximally, grey distally. Hindwing similar. Underside. Costa of forewing ochraceous; remainder of wings very pale green, the discal spots showing through as dark spots. Forewing. ♂ 19 mm; ♀ 21–22 mm.

♂ genitalia (Pl. 4, figs. 32, 33, 35), ♀ genitalia (Pl. 4, fig. 34).

Closely similar in colour and pattern to *P. oculata* PROUT (1915) and to *P. rhodocycla* PROUT (1917); distinguished from both in the male genitalia by the form of the ventral process of the valve; distinguished from the *rhodocycla* in the female genitalia by the form of the sterigma and of the ductus bursae. The female of *oculata* is not known.

Holotype ♂, Tanzania: Usa River, 3900 ft, 4. V. 1965 (DR. SZUNYOGHY). — Paratypes, Tanzania: Usa River, 3900 ft, IX. 1965–II. 1966 (DR. SZUNYOGHY), 1 ♀; Amani, I. 1963, 1 ♂; *ibid.*, I. 1962, both (G. PRINGLE) in BMNH.



Two female specimens in the BMNH, collected in April and May in Nairobi, have genitalia closely similar to those of *croca*; they are tentatively associated with *croca*, but are excluded from the type series.

***Prasinocyma tandi* BETHUNE-BAKER**

*Prasinocyma tandi* BETHUNE-BAKER, 1913, Ann. Mag. nat. Hist., (8) 11: 570.

Usa River, 3900 ft, 27. IV.—18. V. 1965, 4 ♂; *ibid.*, 15. VII. 1965, 1 ♂; *ibid.*, IX. 1965—II. 1966, 3 ♂.

Distribution. Kenya, Tanzania, Zaire, Angola.

***Prasinocyma permitis* PROUT**

*Prasinocyma permitis* PROUT, 1932, Mém. Soc. zool. Fr., 29: 380.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 7 ♀.

Distribution. Tanzania.

***Prasinocyma bifimbriata* PROUT**

*Prasinocyma bifimbriata* PROUT, 1912, in: WYTSMAN, Genera Insect., 129: 157, pl. 3, fig. 9.

*Prasinocyma bifimbriata* PROUT; JANSE, 1935, 2 (3): 294, pl. 12, fig. 16.

Lake Sereri, 3150 ft, 23. IX. 1965, 1 ♀. Usa River 3900 ft, 30. IV. 1966, 1 ♀.

Distribution. East Africa, Ethiopia to Natal, Uganda, Zaire, Angola.

***Prasinocyma bilobata* sp. n.**

(Pl. 4, figs. 36—39)

Forewing greyish green (Pl. 27, B5); discal spot of a darker shade, minute; a small white spot at middle of posterior margin; termen very slightly waved, finely fuscous and edged distally with white; cilia ochraceous suffused with fuscous distally. Hindwing similar, but without small white spot. Hind tibia in male dilate with hair pencil.

Wing measurements. ♂ 11—11.5 mm; ♀ 11—15.5 mm.

♂ genitalia (Pl. 4, figs. 36—38), ♀ genitalia (Pl. 4, fig. 39).

Closely similar to *P. bifimbriata* PROUT (1912) and to *P. albisticta* (WARREN, 1901) (Pl. 1, fig. 4). Distinguished externally from both species in the male by the presence of a hair pencil on the hind tibia.

Distinguished in both sexes from *bifimbriata* by colour and pattern. In that species the wings are a yellower green, the termen of each is smoothly curved, very finely fuscous and not edged distally with white; the discal spots are black and minute. In *bifimbriata* each abdominal segment is white-spotted dorsally; in *bilobata* the abdomen is uniformly green.

Distinguished from *albisticta* by the less crenulate termen to each wing and the reduction of white distad of the fine, fuscous terminal line; distinguished further by the uniformly green abdomen in each sex.

In the male genitalia the form of the tapered process from mid-dorsal margin of the valve and of the aedeagus and in the female genitalia the form of the ostium bursae, the slender tubular ductus bursae and the bilobate corpus bursae are diagnostic.

Holotype ♂, Malawi (Nyasaland): Mlanje, Luchunya R., 13. II. 1914 (S. A. NEAVE), Geometridae genitalia slide no. 8779, in BMNH.

Paratypes, Malawi: Mlanje Plateau, 6500 ft, 13. III. 1913 (S. A. NEAVE), 1 ♀; Kasangazi near Bandawe, 3000 ft above Lake Nyassa (DR. PRENTICE), 1 ♀. — Rhodesia: Salisbury, 24. V. 1919, 1 ♀; *ibid.*, 17. XI. 1918, 1 ♀, all in the BMNH. — Tanzania: Usa River, 3900 ft, IX. 1965—II. 1966 (DR. SZUNYOGHY), 1 ♂ in Hungarian Natural History Museum. — Kenya: (without precise locality) (A. LOVERIDGE), 1 ♂. — Uganda: Buekulla, 1899 (ANSORGE), 1 ♂. — Zaire: Shinkolobwe, 20. X. 1930, 1 ♂; Elisabethville, IV, X, XII (CH. SEYDEL), 2 ♂, 4 ♀. — Ghana: N. Territories, Kete-Krachi (A. W. CARDINAL), 1 ♀. — Ivory Coast: Bingerville, VIII—X (G. MELOU), 2 ♂, 8 ♀. — Angola: Quirimbo, 75 km E. of P. Amboim, 300 m, 7.—12. V. 1934 (K. JORDAN), 1 ♀, all in BMNH.

***Metallochloa* sp.**

Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♂.

Closely similar to and probably conspecific with *M. grisea* PROUT, 1915, at present known only from the unique female holotype from Natal.

***Chlorissa faustinata* (MILLIÈRE) ? subsp.**

*Nemoria faustinata* MILLIÈRE, 1868, Iconogr. Descr. Chenilles Lépid. inédits, 2: 436, 449, pl. 96, figs. 2—8; 1869, Annls. Soc. linn. Lyon (N. S.), 17: 26, 39, pl. 96, figs. 2—8.

Lake Manyara, 3150 ft, 27. V.—19. VI. 1965, 7 ♂, 2 ♀. Lake Sereri, 3150 ft, 27. VIII. 1965, 1 ♂. Usa River, 3900 ft, IX. 1965—II. 1966, 16 ♂, 5 ♀; *ibid.*, 20. V. 1965, 1 ♀; *ibid.*, 12. VII. 1965, 1 ♂. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 2 ♂.

**Distribution.** S. Europe, N. Africa, Syria, Egypt to Tanzania. Represented in W. Africa by *C. faustinata vermicularia* (WARREN, 1897).

***Chlorissa dorsicristata cremnobates* PROUT**

*Chlorissa cremnobates* PROUT, 1930, in: SEITZ, Macrolepid. World, 16: 28, pl. 3h.

*Chlorissa dorsicristata* (WARREN); JANSE, 1935, 2 (3): 302, text-fig. 87, pl. 12, fig. 21.

Usa River, 3900 ft, IX. 1965—II. 1966, 3 ♂; *ibid.*, 16. IV.—20. V. 1965, 9 ♂; *ibid.*, 11.—15. VII. 1965, 2 ♂. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 4 ♂, 1 ♀. W. slope of Mt Meru, Olkokola, 8700 ft, 6.—27. XII. 1965, 1 ♂.

**Distribution.** Kenya, Tanzania. Represented in S. Africa by *C. d. dorsicristata* (WARREN, 1905), with which the East Africa race is structurally closely similar.

***Chlorissa apographa* PROUT**

*Chlorissa apographa* PROUT, 1930, in: SEITZ, Macrolepid. World, 16: 28, pl. 3i.

Katesh, 5900 ft, 26. VI. 1965, 1 ♂.

**Distribution.** Uganda, Kenya.

***Chlorissa malescripta* (WARREN)**

*Hemithea malescripta* WARREN, 1897, Novit. zool., 4: 40.

Lake Sereri, 3150 ft, 22. VIII. 1965, 1 ♂. Usa River, 3900 ft, IX. 1965—II. 1966, 2 ♂. Katesh, 5900 ft, 26. VI. 1965, 1 ♂.

**Distribution.** East Africa, Ethiopia to Natal.

***Chlorissa unilinea* (WARREN)**

*Hemithea unilinea* WARREN, 1897, Novit. zool., 4: 40.

*Chlorissa approximans* (WARREN) sensu JANSE, 1935, 2 (3): 302, text-fig. 87.

Lake Manyara, 3150 ft, 7. IV.—22. VI. 1965, 5 ♂, 3 ♀; *ibid.*, 6. IX. 1965, 1 ♂. Lake Sereri, 3150 ft, 20. VIII. 1965, 1 ♂. Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♂; *ibid.*, 10. V. 1965, 1 ♂.

**Distribution.** S. Africa, Transvaal, Natal, Cape Province.



***Chlorissa subrufibasis* PROUT**

*Chlorissa subrufibasis* PROUT, 1930, in: SEITZ, *Macrolepid. World*, **16**: 28, pl. 3h.

Usa River, 3900 ft, IX. 1965.—II. 1966, 28 ♂, 8 ♀; *ibid.*, 28. IV. 1965, 1 ♂, 1 ♀; *ibid.*, 18. V.—8. VI. 1965, 1 ♂, 2 ♀; *ibid.*, 9.—17. VII. 1965, 3 ♂, 1 ♀; *ibid.*, 12. VIII.—6. IX. 1965, 7 ♂, 1 ♀. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 14 ♂, 1 ♀.

*Distribution*. East Africa, Ethiopia to Tanzania.

***Neromia rubripunctilla* PROUT**

*Neromia rubripunctilla* PROUT, 1912, in: WYTSMAN, *Genera Insect.*, **129**: 182.

*Neromia rubripunctilla* PROUT; JANSE, 1935: 308, text-fig. 88, pl. 13, fig. 2.

Usa River, 3900 ft, IX. 1965—II. 1966, 5 ♂; *ibid.*, 24.—25. IV. 1965, 3 ♂.

*Distribution*. Kenya, Rhodesia, Transvaal.

***Omphax plantaria* GUENÉE**

*Omphax plantaria* GUENÉE, 1857, in: BOISDUVAL and GUENÉE, *Hist. nat. Insectes, Spec. gén. Lépid.*, **9**: 368.

*Omphax plantaria* GUENÉE; JANSE, 1935 **2** (3): 330, text-figs. 93, 94, pl. 13, fig. 24.

*Omphax plantaria* GUENÉE; FLETCHER, 1958, *Veröff. zool. StSamml. Münch.*, **5**: 122. (*Synonymy*).

Usa River, IX. 1965—II. 1966, 1 ♂; *ibid.*, 21. IV.—3. V. 1965, 2 ♂.

*Distribution*. East Africa, Ethiopia to Cape Province, Zaire.

***Microloxia herbaria ruficornis* WARREN**

*Microloxia ruficornis* WARREN, 1905, *Novit. zool.*, **4**: 42.

*Microloxia ruficornis* WARREN; PROUT, 1930, in: SEITZ, **16**: 37, pl. 4d.

*Microloxia ruficornis* WARREN; JANSE, 1935, **2** (3): 352, text-fig. 101, pl. 10, fig. 1.

Lake Manyara, 3150 ft, 28. V. 1965, 1 ♂; *ibid.*, 8.—22. VI. 1965, 6 ♂, 1 ♀. Usa River, 3900 ft, 16. V. 1965, 1 ♂; *ibid.*, IX. 1965—II. 1966, 3 ♂.

*Distribution*. East Africa, Kenya to Cape Province, Angola. The nominate subspecies, *h. herbaria* [HÜBNER, (1813)] occurs in Mediterranean Europe; the species is represented in North Africa by ssp. *halimaria* (CHRÉTIEN, 1909), in south-eastern Russia by ssp. *advolata* (EVERSMANN, 1837) and in India and Ceylon by ssp. *indecretata* [WALKER, (1863)].

***Cacochloris ochrea* (WARREN)**

*Euchloris ochrea* WARREN, 1897, *Novit. zool.*, **4**: 210, pl. 5, fig. 21.

*Cacochloris ochrea* (WARREN); PROUT, 1930, in: SEITZ, **16**: 39, pls. 2k, 4e.

Lake Manyara, 3150 ft, 26. V. 1965, 1 ♀.

*Distribution*. West Africa, Senegal to Angola, Zaire, Sudan, Uganda, Kenya, Tanzania.

***Collesis mimica* WARREN**

*Collesis mimica* WARREN, 1897, *Novit. zool.*, **4**: 37.

*Collesis mimica* WARREN; PROUT, 1930, in: SEITZ, **16**: 41, pls. 2g, 4h.

*Collesis mimica* WARREN; JANSE, 1935, **2** (3): 371, text-fig. 110, pl. 8, fig. 38.

Usa River, 3900 ft, IX. 1965—II. 1966, 2 ♂. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂; *ibid.*, 8. V. 1965, 2 ♂. Katesh, 5900 ft, 27. VI. 1965, 1 ♂.

*Distribution*. Uganda, Kenya, Mozambique, Rhodesia.

***Syncollesis elegans* (PROUT)**

*Omphacodes elegans* PROUT, 1912, in: WYTSMAN, *Genera Insect.*, **129**: 221.

*Syncollesis elegans* (PROUT); PROUT, 1930, in: SEITZ, **16**: 41, pl. 4h.

Lake Manyara, 3150 ft, 27. V.—23. VI. 1965, 2 ♀. Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♂; *ibid.*, 28. III.—3. V. 1965, 2 ♂.

*Distribution*. Kenya.



**Lophostola atridisca** (WARREN)

*Hemithea atridisca* WARREN, 1897, Novit. zool., **4**: 40.

*Lophostola atridisca* (WARREN); JANSE, 1935, **2** (3): 378, text-fig. 114, pl. 8, fig. 23.

Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♂.

**Distribution.** S. Africa, Natal, Transvaal, Mozambique, Tanzania. Represented in Kenya and Uganda by ssp. *dummeri* PROUT, 1930 and in Madagascar by ssp. *cumatilis* PROUT, 1922.

**Comostolopsis rubristicta** (WARREN)

*Eucrostes rubristicta* WARREN, 1899, Novit. zool., **6**: 23.

*Comostolopsis rubristicta* (WARREN); PROUT, 1930, in: SEITZ, **16**: 44, pl. 4i.

Lake Sereri, 3150 ft, 23. VIII. 1965, 1 ♀. Usa River, 3900 ft, IX. 1965—II. 1966, 3 ♂, 1 ♀.

**Distribution.** Kenya, Uganda, Transvaal, Cape Province, Zaire, Cameroun, Nigeria, Ivory Coast, Sierra Leone, Sao Thomé Island.

**Comostolopsis simplex viridicilia** ssp. n.

(Pl. 1, fig. 1; Pl. 5, figs. 40, 41)

Distinguished from the nominate subspecies by the colour of the cilia and the greater forewing length. In *C. s. simplex* WARREN (1902) the cilia are yellow; in ssp. *viridicilia* they are green. In *C. s. simplex* the forewing length is, ♂ 10 mm; ♀ 10—11 mm; in ssp. *viridicilia* it is, ♂ 9.5—12 mm; ♀ 10—13.5 mm.

The genitalia do not appear to differ.

In most examples the discal spots on both fore- and hindwings are green; in some examples those of the fore-wing are black; in a few they are black on both fore- and hindwings; in four examples the veins are marked with black dots on the postmedial fascia and at the termen and the discal spots are enlarged and wholly black.

Holotype ♂, Tanzania: W. slope of Mt Meru, Olkokola, 8700 ft, 18. VII. 1965 (DR. SZUNYOGHY). — Paratypes, Tanzania: Holotype data, 16.—20. VII. 1965, 6 ♂, 5 ♀; ibid., 6.—27. XII. 1965, 4 ♂, 36 ♀.

**Comostolopsis glos** sp. n.

(Pl. 1, fig. 2; Pl. 5, fig. 42)

♀. Head white between antennae; remainder of vestiture greyish green. Forewing; costa light buff; termen slenderly greyish rose; cilia light buff; remainder greyish green (Pl. 28, B5); antemedial fascia weakly defined, light buff with a greyish rose spot on submedian vein and usually another smaller one on median vein; postmedial fascia crenulate, well defined, light buff with small greyish spots on veins  $M_1$ ,  $M_3$  and submedian (2A). Hindwing similar, but without an antemedial fascia. Discal spots fuscous.

Female genitalia (Pl. 5, fig. 42).

Externally closest in wing colour to *C. subsimplex* PROUT (1913) from Madagascar. Distinguished from *C. simplex* WARREN (1902) by the duller,

less yellowish green colour of the wings and by the presence of the slender greyish rose terminal line. In the female genitalia the form of the sterigma is diagnostic.

Holotype ♀, Tanzania: E. slope of Mt Meru, 5700 ft, 12. V. 1965 (Dr. SZUNYOGHY). — Paratypes, Tanzania: Usa River, 3900 ft, 21. V. 1965, 1 ♀; holotype data, 7 ♀; *ibid.*, 21. I.—1. II. 1966, 1 ♀; Amani, V, IX. 1964 (G. PRINGLE), 5 ♀ in BMNH.

A female in the collection of the BMNH with closely similar genitalia is provisionally associated with *glos*, but is excluded from the type series. It bears the following data.

Malawi (Nyasaland): Mlanje Plateau, 6500 ft, 18. XI. 1913 (S. A. NEAVE), Geometridae genitalia slide no. 9461.

#### ***Comostolopsis coerulea* WARREN**

*Comostolopsis coerulea* WARREN, 1902, Novit. zool., **9**: 494.

*Comostolopsis coerulea* WARREN; PROUT, 1930, in: SEITZ, **16**: 45, pl. 4i.

W. slope of Mt Meru, Olkokola, 8700 ft, 19. VII. 1965, 1 ♀; *ibid.*, 6.—27. XII. 1965, 9 ♀.  
Distribution. Kenya.

#### ***Mixocera xanthostephana* PROUT**

*Mixocera xanthostephana* PROUT, 1912, in: WYTSMAN, Genera Insect., **129**: 244.

*Mixocera xanthostephana* PROUT; PROUT, 1930, in: SEITZ, **16**: 45, pl. 4k.

*Mixocera xanthostephana* PROUT; JANSE, 1935 **2** (3): 386, text-fig. 116, pl. 8, fig. 18.

Lake Manyara, 3150 ft, 30. V.—15. VI. 1965, 3 ♀.

Distribution. Uganda, Kenya, Malawi, Rhodesia, Transvaal, Natal.

#### ***Mixocera albistrigata* (PAGENSTECHER)**

(Pl. 5, figs. 44, 47).

*Eucrostes albistrigata* PAGENSTECHER, 1893, Jb. Hamb. wiss. Anst., **10** (2): 252.

*Euchloris oleagina* WARREN, 1897, Novit. zool., **4**: 38. Syn. n.

*Microloxia serraticornis* WARREN, 1897, *ibid.*, **4**: 42. Syn. n.

*Microloxia frustratoria* WALLENGREN sensu JANSE, 1935, **2** (3): 384, text-fig. 116, pl. 10, fig. 16.

Lake Manyara, 3150 ft, 29. V.—16. VI. 1965, 1 ♂. Usa River, 3900 ft, IX. 1965—II. 1966, 2 ♂, 1 ♀.

Distribution. East Africa, Ethiopia to Natal, Nigeria, Ghana, Ivory Coast.

The males of this species are readily distinguished by the presence of a strongly sclerotized, tapered projection from the posterior margin of the eighth sternite (Pl. 5, fig. 44).

*Mixocera albimargo* WARREN (1901), previously included in the synonymy of *Mixocera albistrigata*, has on examination of the genitalia, proved to be a distinct species (Pl. 5, figs. 45, 48).

#### ***Mixocera parvulata* (WALKER)**

(Pl. 5, figs. 43, 46)

*Nemoria parvulata* WALKER, [1863] 1862, List Specimens lepid. Insects Colln Br. Mus., **26**: 1559.

*Mixocera albistrigata* PAGENSTECHER sensu JANSE, 1935, **2** (3): 385, text-fig. 116, pl. 8, fig. 19, pl. 10, fig. 17.

Lake Manyara, 3150 ft, 28. V.—21. VI. 1965, 12 ♂, 6 ♀.

Distribution. East Africa, Ethiopia to Natal, Madagascar, India, Ceylon.

The male genitalia of East African and Madagascan specimens differ slightly from each other and from Indian specimens in the form of the sclerotized part of the valve; these small modifications may be shown to be of subspecific value when *Mixocera* is revised.



**Androzeugma tenuis** (WARREN)

*Syndromodes tenuis* WARREN, 1898, Novit. zool., **5**: 16.

*Androzeugma hapala* PROUT, 1913, Novit. zool., **20**: 442.

*Androzeugma tenuis* (WARREN); PROUT, 1930, in: SEITZ, **16**: 46, pl. 4k.

Usa River, 3900 ft, 19. IV.—21. V. 1965, 2 ♂; *ibid.*, IX. 1965—II. 1966, 9 ♂, 1 ♀.

Distribution. West Africa, Gambia to Nigeria, Uganda, Kenya, Botswana.

**Eucrostes disparata** WALKER

*Eucrostes disparata* WALKER, 1861, List Specimens lepid. Insects Colln Br. Mus., **22**: 567.

*Eucrostes disparata* WALKER; PROUT, 1930, in: SEITZ, **16**: 46, pl. 4k (synonymy).

*Eucrostes disparata* WALKER; JANSE, 1935, **2** (3): 390, text-fig. 118, pl. 8, fig. 11, pl. 10, fig. 10 and synonymy.

Lake Manyara, 3150 ft, 28. V.—16. VI. 1965, 3 ♂, 1 ♀. Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♂.

Distribution. East Africa, Ethiopia to Natal, Mascarene and Indo-Australian regions.

**Allochrotes impunctata** (WARREN)

*Eucrotes impunctata* WARREN, 1897, Novit. zool., **4**: 211, pl. 5, fig. 15.

*Allochrotes impunctata* (WARREN); PROUT, 1930, in: SEITZ, **16**: 47, pl. 4k and synonymy.

*Allochrotes impunctata* (WARREN); JANSE, 1935, **2** (3): 395, text-fig. 119, pl. 8, fig. 6 and synonymy.

Lake Manyara, 3150 ft, 27. V.—23. VI. 1965, 2 ♂, 10 ♀. Usa River, 3900 ft, 21. V. 1965, 1 ♀.

Distribution. Africa, south of Sahara.

**Allochrotes biornata** PROUT

*Allochrotes biornata* PROUT, 1913, Ann. Transv. Mus. **3** (4): 196, pl. 12, fig. 38.

*Allochrotes biornata* PROUT, PROUT, 1930, in: SEITZ, **16**: 47, pl. 4k.

*Allochrotes biornata* PROUT; JANSE, 1935, **2** (3): 396, text-fig. 119, pl. 8, fig. 7, pl. 10, fig. 8.

Lake Manyara, 3150 ft, 26. V. 1965, 1 ♂.

Distribution. Rhodesia, Transvaal, Natal.

**Tropiccollesis albiceris** PROUT

(Pl. 1, fig. 5; Pl. 6, figs. 49—51)

*Tropiccollesis albiceris* PROUT, 1930, in: SEITZ, Macrolepid. World, **16**: 42.

Lake Manyara, 3150 ft, 29. V. 1965, 1 ♂. Usa River, 3900 ft, 19. IV.—3. V. 1965, 3 ♀. Katesh, 5900 ft, 30. VI. 1965, 1 ♀.

Distribution. Kenya.

The first known male, recorded above, shows the species to be closely related to *Acidaliastis prophanes* PROUT (1922) and similarly sexually dimorphic in colour.

The frenulum is present and the hind tibia is dilate with a longitudinal fold and two pairs of spurs. Frons and prothorax greyish yellow (Pl. 4, B3, beige); remainder of vestiture light brown. Upperside. Forewing: basal and terminal thirds beige irrorate with light brown, basal third only lightly; medial area light brown (Pl. 6, D7, raw Sienna) ante- and postmedial fasciae and discal spot of a darker shade. Hindwing brown, terminal third of lighter tone, postmedial fascia of darker shade. Underside. Costa of forewing and base of each wing greyish yellow irrorate with brown; remainder of each wing brown; postmedial fascia of darker shade.



***Acidaliastis systema* sp. n.**

(Pl. 1, fig. 7; Pl. 6; figs. 52—54)

Similar in size and colour to *A. subbrunnescens* (PROUT, 1916). Distinguished externally by the brown ante- and postmedial fasciae of the forewing, which usually approximate and fuse near the apex, and by the ivory, immaculate hindwing. Distinguished structurally in the male genitalia (Pl. 6, figs. 52, 53) by the form of the sclerotized process on the valve and the short stout aedoeagus and in the female genitalia (Pl. 6, fig. 54) by the strongly sclerotized, anteriorly tapered, posterior apophyses.

Holotype ♂, Tanzania: Lake Sereri, 3150 ft, 15. VIII. 1965 (DR. SZUNYOGHY). — Paratypes, Tanzania: holotype locality, 20. VIII.—23. IX. 1965, 5 ♀; Katesh, 5900 ft, 25. VI. 1965, 1 ♀.

Two female specimens, one without abdomen, in the BMNH, collected in December at Kibwezi in Kenya agree in the structure of the genitalia with *A. systema*, but differ in the colour and pattern of the forewing, which is green with well separated ivory ante- and postmedial fasciae. It seems that *A. systema* may occur in two colour forms, possibly seasonal.

## STERRHINAE

***Dithecodes delicata* (WARREN)**

*Mnesithetis delicata* WARREN, 1899, Novit. zool., **6**: 295.

*Dithecodes delicata* (WARREN); FLETCHER, 1963, Explor. Parc natn. Albert, (2) **15** (1): 6, figs. 33, 61, 62 (♂ and ♀ genitalia).

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂; *ibid.*, 12. V. 1965, 1 ♀.

Distribution. Kenya, Uganda.

***Dithecodes ornithospila* PROUT**

*Mnesithetis ornithospila* PROUT, 1911, Entomologist, **44**: 292.

*Dithecodes ornithospila* PROUT; PROUT, 1933, in: SEITZ, **16**: 49, pl. 6a.

*Dithecodes ornithospila* PROUT; FLETCHER, 1963, *ibid.*, (2) **15** (1): 6, figs. 32, 63, 64 (♂ and ♀ genitalia).

Usa River, 3900 ft, 29. IV. 1965, 1 ♂.

Distribution. West Africa, Ivory Coast to Angola, Zaire, Ethiopia, Kenya, Tanzania, Malawi.

***Ptochophyle rubripennis* (WARREN)**

*Chrysolene rubripennis* WARREN, 1898, Novit. zool., **5**: 238.

*Chrysolene sanguinolenta* WARREN, 1898, *ibid.*, **5**: 238.

*Ptochophyle rubripennis* (WARREN); PROUT, 1933, in: SEITZ, **16**: 50, pl. 6b.

Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♂.

Distribution. Ivory Coast, Nigeria, Angola, Zaire.

***Chrysocraspeda leighata holobapta* PROUT**

*Chrysocraspeda leighata holobapta* PROUT, 1917, Novit. zool., **24**: 433.

*Acidalia medjaria* HOLLAND, 1920, Bull. Am. Mus. nat. Hist., **43**: 312, fig. 6.

Usa River, 3900 ft, 30. IV. 1965, 1 ♂.

**Distribution.** Nigeria, Zaire, Uganda. The nominate subspecies occurs in Rhodesia and Natal and was illustrated by PROUT, 1933, in: SEITZ, **16**: 51, pl. 6b and by JANSE, 1934, **2** (2): 136, text-fig. 44, pl. 3, fig. 31.

***Chlorerythra rubriplaga extenuata* PROUT**

*Chlorerythra rubriplaga extenuata* PROUT, 1932, Novit. zool., **38**: 11.

Lake Manyara, 3150 ft, 28. V.—23. VI. 1965, 5 ♀. Lake Sereri, 3150 ft, 14. VIII.—16. IX. 1965, 3 ♂, 6 ♀. Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♂; *ibid.*, 19. V. 1965, 2 ♀. Katesh, 5900 ft, 26.—30. VI. 1965, 10 ♂, 2 ♀.

**Distribution.** Somalia, Ethiopia, Kenya, Tanzania. The nominate subspecies occurs from Malawi and Mozambique to Cape Province and was illustrated by PROUT, 1933, in: SEITZ, **16**: 52, pl. 6b and by JANSE, 1934, **2** (2): 137, text-fig. 45, pl. 3, fig. 40.

***Traminda rufistrigata* (HAMPSON)**

*Ephyra rufistrigata* HAMPSON, 1896, Proc. zool. Soc. Lond., **1896**: 267, pl. 10, fig. 3.

*Traminda rufistrigata* (HAMPSON); PROUT, 1933, in: SEITZ, **16**: 53, pl. 6c.

Usa River, 3900 ft, 16. V.—4. VI. 1965, 3 ♂.

**Distribution.** Iran, Jordan, Yemen, Sudan, Ethiopia, Kenya, Uganda.

*Cosymbia marcida* WARREN, 1905, Novit. zool., **12**: 27, pl. 4, fig. 28, described from Sudan, is treated by PROUT (1933) as a subspecies of *rufistrigata*.

***Traminda acuta pallida* WARREN**

*Traminda pallida* WARREN, 1899, Novit. zool., **6**: 296.

*Traminda acuta pallida* WARREN; PROUT, 1933, in: SEITZ, **16**: 53, pl. 6b.

Lake Manyara, 3150 ft, 30. V.—1. VI. 1965, 2 ♀. Lake Sereri, 3150 ft, 16. VIII.—23. IX. 1965, 1 ♂, 1 ♀. Usa River, 3900 ft, 22.—28. IV. 1965, 2 ♀. Katesh, 5900 ft, 26. VI. 1965, 1 ♀.

**Distribution.** Ethiopia, Sudan, N. E. Zaire, Uganda, Kenya, Tanzania. Possibly a dry season form of *T. acuta* (WARREN, 1897) described from Natal.

***Traminda obversata obversata* (WALKER)**

*Acidalia obversata* WALKER, 1861, List Specimens lepid. Insects Colln Br. Mus., **23**: 790.

*Traminda obversata* (WALKER); PROUT, 1933, in: SEITZ, **16**: 54, pl. 6c; 1934, in: STRAND, Lepid. Cat., **61**: 67 (synonymy).

*Traminda obversata* (WALKER); JANSE, 1934, **2** (2): 140, text-fig. 46, pl. 3, fig. 37.

Usa River, 3900 ft, 29. IV. 1965, 1 ♂; *ibid.*, 1965, 1 ♂.

**Distribution.** Equatorial Africa. Represented in Madagascar by ssp. *atroviridata* (SAALMÜLLER, 1880).

***Problepsis aegretta aegretta* FELDER**

*Problepsis aegretta* FELDER, 1875, Reise öst. Fregatte Novara (Zool.) **2** (Abt. 2): pl. 128, fig. 14.

*Problepsis aegretta* FELDER; PROUT, 1933, in: SEITZ, **16**: 59, pl. 8a.

*Problepsis aegretta* FELDER; JANSE, 1934, **2** (2): 160, text-fig. 52, pl. 7, fig. 33.

E. slope of Mt. Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂.

**Distribution.** S. Africa, Natal.

Closely similar in colour and pattern to *P. flavistigma dilatistigma* PROUT, (1917) from Kenya and to *P. rorida* PROUT (1932) from Malawi, lacking all dark marking in the discal area of the forewing; in this respect matched by a male in the collection of the BMNH from Mt. Kilimandjaro.

Structurally matches the type of *aegretta* and placed with the nominate subspecies until adequate material is available to assess geographic variation.

***Problepsis flavistigma dilatistigma* PROUT**

*Problepsis flavistigma dilatistigma* PROUT, 1917, Novit. zool., **24**: 432.

E. slope of Mt. Meru, 5700 ft, 21. I.—1. II. 1966, 2 ♂.

**Distribution.** Kenya. The nominate subspecies occurs in Sierra Leone and was illustrated by PROUT, 1933, in: SEITZ, **16**: 59, pl. 8a.



**Problepsis digammata** KIRBY

*Problepsis digammata* KIRBY, 1896, Ann. Mag. nat. Hist., (6) **18**: 396.

*Problepsis digammata* KIRBY; PROUT, 1933, in: SEITZ, **16**: 59, pl. 8a (as *digammata*, an error); 1934, in: STRAND, Lepid. Cat., **61**: 153 (synonymy).

*Problepsis digammata* KIRBY; JANSE, 1934, **2** (2): 159, text-fig. 52, pl. 4, fig. 17.

Usa River, 3900 ft, 28. IV. 1965, 1 ♂.

Distribution. Uganda, Kenya to South Africa, Sierra Leone.

**Scopula rufisalsa pallidisalsa** PROUT

*Scopula rufisalsa pallidisalsa* PROUT, 1932, Mém. Soc. zool. Fr., **29**: 397.

Usa River, 3900 ft, 20. IV.—22. V. 1965, 5 ♂, 1 ♀; *ibid.*, IX. 1965—II. 1966, 1 ♀. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♀.

Distribution. Kenya, Uganda, E. Zaire, Zambia, Tanzania. Represented in South Africa by the nominate subspecies, *S. r. rufisalsa* (WARREN, 1897) and illustrated by PROUT, 1933, in: SEITZ, **16**: 61, pl. 6h and by JANSE, 1934, **2** (2): 170, text-fig. 63, pl. 6, fig. 5.

Three of the male specimens differ in their shorter wing length (9—11 mm), paler colour and modified pattern, but do not differ in structure from *S. rufisalsa* (WARREN). On the upperside of the forewing the postmedial fascia is less crenulate and anterior of it, the medial area is strongly irrorate with fuscous between veins  $M_3$  and  $Cu_{1b}$ . The upperside of the hindwing is only weakly marked with little dark irroration, except in the distal area, distad of the postmedial fascia. The areas of fuscous irroration on the upperside are strongly represented on the underside, contrasting markedly with the pale ground colour.

**Scopula curvimargo** (WARREN)

*Induna curvimargo* WARREN, 1900, Novit. zool., **7**: 92.

*Psilephyra bilineata* BASTELBERGER, 1909, Int. ent. Z., **3**: 101. Syn. n.

*Induna nubicineta* HAMPSON, 1910, Proc. zool. Soc. Lond., **1910**: 477, pl. 39, fig. 24.

*Scopula curvimargo* (WARREN); PROUT, 1933, in: SEITZ, **16**: 62, pls. 6h, 8e (as *bilineata*).

*Scopula curvimargo* (WARREN); JANSE, 1934, **2** (2): 175, text-figs. 54, 57, 58, pl. 7, fig. 13.

Katesh, 5900 ft, 29—30. VI. 1965, 1 ♂, 1 ♀.

Distribution. East Africa, Ethiopia to Natal.

Examination of the genitalia of the holotypes of *I. curvimargo* and *I. nubicineta* and of a paratype of *P. bilineata* confirms the synonymy suggested by PROUT, 1933, in: SEITZ, **16**: 62.

**Scopula dapharia** (SWINHOE)

*Lycauges dapharia* SWINHOE, 1904, Trans. ent. Soc. Lond., **1904**: 552.

*Scopula dapharia* (SWINHOE); PROUT, 1933, in: SEITZ, **16**: 63, pl. 6k.

Usa River, 3900 ft, 29. IV. 1965, 1 ♂.

Distribution. Kenya.

**Scopula longitarsata** PROUT

*Scopula longitarsata* PROUT, 1933, in: SEITZ, Macrolepid. World, **16**: 64, pl. 6k.

Usa River, 3900 ft, 2.—20. V. 1965, 5 ♂, 3 ♀; *ibid.*, 12—14. VII. 1965, 3 ♂.

Distribution. Kenya.

**Scopula sinnaria** (SWINHOE)

*Emmiltis sinnaria* SWINHOE, 1904, Trans. ent. Soc. Lond., **1904**: 556.

*Emmiltis bisinuata* WARREN, 1905, Novit. zool., **12**: 388.

*Scopula sinnaria* (SWINHOE); PROUT, 1933, in: SEITZ, **16**: 64, pl. 6k.

*Scopula sinnaria* (SWINHOE); JANSE, 1934, **2** (2): 182, text-figs. 60, 62, pl. 6, fig. 8.



Katesh, 5900 ft, 25—30. VI. 1965, 2 ♂.

*Distribution.* Ghana, Nigeria, Angola, Kenya to Cape Province.

***Scopula sagittilinea* (WARREN)**

*Craspedia sagittilinea* WARREN, 1897, Novit. zool., **4**: 219.

*Scopula sagittilinea* (WARREN); PROUT, 1933, in: SEITZ, **16**: 65, pl. 61.

Lake Manyara, 3150 ft, 8. VI. 1965, 1 ♀. Lake Sereri, 3150 ft, 23.—26. VIII. 1965, 2 ♂.

Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♀. Katesh, 5900 ft, 26. VI. 1965, 1 ♀.

*Distribution.* Somalia, Ethiopia, Uganda, Kenya, Tanzania.

***Scopula accentuata* (GUENÉE)**

*Acidalia accentuata* GUENÉE, 1857, in: BOISDUVAL and GUENÉE, Hist. nat. Insectes, Spec. gén. Lépid., **9**: 490.

*Scopula accentuata* (GUENÉE); PROUT, 1933, in: SEITZ, **16**: 65, pl. 61; 1934, in: STRAND, Lepid. Cat., **63**: 205 (synonymy).

*Scopula accentuata* (GUENÉE); JANSE, 1934, **2** (2): 186, text-figs. 54, 56, 58, pl. 7, figs. 18, 22.

Usa River, 3900 ft, 30. IV. 1965, 1 ♀.

*Distribution.* East and South Africa.

***Scopula silonaria* (GUENÉE)**

*Phyletis silonaria* GUENÉE, 1857, in: BOISDUVAL and GUENÉE, Hist. nat. Insectes, Spec. gén. Lépid., **10**: 169.

*Phyletis sticticata* WARREN, 1901, Novit. zool., **8**: 10.

*Scopula silonaria* (GUENÉE); PROUT, 1933, in: SEITZ, **16**: 66, pl. 6m.

Usa River, 3900 ft, 2. V. 1965, 1 ♂.

*Distribution.* Kenya, Uganda, Burundi, E. Zaire, Tanzania.

***Scopula erinaria erinaria* (SWINHÖE)**

*Lycauges erinaria* SWINHÖE, 1904, Trans. ent. Soc. Lond., **1904**: 553.

*Scopula erinaria* (SWINHÖE); PROUT, 1933, in: SEITZ, **16**: 66, pl. 6m.

*Scopula erinaria* (SWINHÖE); JANSE, 1934, **2** (2): 188, text-figs. 56, 58, pl. 7, fig. 19.

Usa River, 3900 ft, 1965, 2 ♂.

*Distribution.* Ethiopia, Kenya, Tanzania, Malawi. Represented in S. Africa by ssp. *isolata* PROUT (1920).

***Scopula bigeminata* (WARREN)**

*Craspedia bigeminata* WARREN, 1897, Novit. zool., **4**: 50.

*Scopula bigeminata* (WARREN); PROUT, 1933, in: SEITZ, **16**: 66, pl. 7a; 1934, in: STRAND, Lepid. Cat., **63**: 207 (synonymy).

*Scopula bigeminata* (WARREN); JANSE, 1934, **2** (2): 189, text-figs. 56—58, pl. 7, fig. 10.

Usa River, 3900 ft, 25. IV.—17. V. 1965, 3 ♂. E. slope of Mt Meru, 5700 ft, 14. IV.—12. V. 1965, 3 ♀. Katesh, 5900 ft, 30. VI. 1965, 1 ♂.

*Distribution.* Ethiopia, Sudan, Uganda, Kenya, S. Africa.

***Scopula atricapilla* PROUT**

*Scopula atricapilla* PROUT, 1934, Novit. zool., **39**: 107.

Usa River, 3900 ft, 18. IV. 1965, 1 ♂; *ibid.*, 16. V. 1965, 1 ♀.

*Distribution.* Kenya, Uganda, E. Zaire.

***Scopula seydeli* PROUT**

*Scopula seydeli* PROUT, 1934, Rev. Zool. Bot. afr., **26**: 83.

Lake Manyara, 3150 ft, 9. VI. 1965, 1 ♀. Usa River, 3900 ft, 28. IV.—4. V. 1965, 1 ♂; *ibid.*, IX. 1965—II. 1966, 3 ♂.

*Distribution.* Kenya, Uganda, S. E. Zaire, Malawi.

**Scopula dissonans (WARREN)**

*Craspedia dissonans* WARREN, 1897, Novit. zool., **4**: 51.

*Scopula dissonans* (WARREN); PROUT, 1933, in: SEITZ, **16**: 66, pl. 7a.

*Scopula dissonans* (WARREN); JANSE, 1934, **2** (2): 191, text-figs. 57, 58, pl. 7, fig. 16.

Lake Manyara, 3150 ft, 19. VI. 1965, 1 ♀; *ibid.*, 28. V. 1965, 1 ♀.

Distribution. Sudan and Ethiopia to Natal and Angola.

**Scopula natalica (BUTLER)**

*Acidalia natalica* BUTLER, 1875, Ann. Mag. nat. Hist., (4) **16**: 418.

*Scopula natalica* (BUTLER); PROUT, 1933, in: SEITZ, **16**: 67, pl. 7a; 1934, in: STRAND, Lepid. Cat., **63**: 208 (synonymy).

*Scopula natalica* (BUTLER); JANSE, 1934, **2** (2): 191, text-figs. 54, 63, pl. 4, fig. 21, pl. 6, figs. 20, 21.

Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♂, 3 ♀; *ibid.*, III—V. 1965, 1 ♂, 3 ♀. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♀.

Distribution. Equatorial Africa.

JANSE, 1934, *ibid.*, **2**: 192 suggested that *Synelys pudens* WARREN (1905), placed by PROUT in the synonymy of *Scopula internata* (GUENÉE, 1857), should be placed in the synonymy of *S. natalata* (BUTLER, 1875); however, examination of the holotype of *pudens* WARREN confirms PROUT's placing. JANSE was misled by a specimen in the S. African Museum that had been misidentified by WARREN.

**Scopula rufinubes (WARREN)**

*Craspedia rufinubes* WARREN, 1900, Novit. zool., **7**: 91.

*Scopula rufinubes* (WARREN); PROUT, 1933, in: SEITZ, **16**: 69, pl. 7c.

*Scopula rufinubes* (WARREN); JANSE, 1935, **2** (3): 194, text-figs. 59, 62, pl. 5, fig. 34.

Lake Manyara, 3150 ft, 7—10. IV. 1965, 1 ♂; *ibid.*, 12. VI. 1965, 1 ♀.

Distribution. Ivory Coast, Uganda, Somalia, Ethiopia, Kenya, Tanzania, Rhodesia, Transvaal, Natal, Madagascar.

PROUT, 1934, in: STRAND, Lepid. Cat., **63**: 221 placed *rufinubes* as a subspecies of an Oriental species, *Scopula pulchellata* (FABRICIUS, 1794).

Examination of the type specimen of *Phalaena pulchellata* FABRICIUS in the Zoological Museum in Copenhagen shows it to be a senior subjective synonym of *Acidalia nictata* GUENÉE, 1857, *syn. n.*

The next available name for the Oriental species *Scopula pulchellata* FABRICIUS *sensu auct.* is *Acidalia addictaria* WALKER, 1861, *stat. n.*

**Scopula fimbrilineata fimbrilineata (WARREN)**

*Craspedia fimbrilineata* WARREN, 1902, Novit. zool., **9**: 499.

*Scopula fimbrilineata* (WARREN); PROUT, 1933, in: SEITZ, **16**: 69, pl. 7d; 1934, in: STRAND, Lepid. Cat., **63**: 226 (synonymy).

*Scopula fimbrilineata* (WARREN); JANSE, 1935, **2** (3): 199, text-figs. 55, 56, 58; pl. 7, figs. 11, 21.

Usa River 3900 ft, 18. IV. 1965, 1 ♂; *ibid.*, 10. VII. 1965, 1 ♂.

Distribution. East Africa, Uganda, Kenya to Natal, Angola, Madagascar.

**Scopula argentidisca (WARREN)**

*Craspedia argentidisca* WARREN, 1902, Novit. zool., **9**: 498.

*Craspedia naias* WARREN, 1903, *ibid.*, **10**: 272.

*Scopula argentidisca* (WARREN); PROUT, 1933, in: SEITZ, **16**: 70, pl. 7d.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂.

Distribution. Kenya, Tanzania, Zambia.



**Scopula galactina** sp. n.

(Pl. 1, fig. 6; Pl. 6, figs. 55—57; Pl. 7, fig. 60)

♂♀. Frons fuscous black. Wings white lightly irrorate with fuscous black and patterned with cream coloured transverse fasciae, as illustrated; discal spots fuscous black.

Closely related to and closely similar in colour to *S. quadrifasciata* (BASTELBERGER, 1909), to *Scopula sincera* (WARREN, 1901) and to *Scopula nipha* FLETCHER, 1955. Distinguished externally by the acute angling of the slender medial and postmedial fasciae between veins  $R_5$  and  $M_1$  on the forewing and structurally in the male by the short, symmetrical cerata.

Holotype, Kenya; Kibwezi, XII. 1920 (W. FEATHER), Geometridae genitalia slide no. 9586, in BMNH. — Paratype, Kenya; Kibwezi, IV. 1922, 1 ♂, 2 ♀; *ibid.*, 23. IV. 1919, 1 ♀; 2. V. 1919, 1 ♂; XI. 1920, 1 ♀; XII. 1920, 6 ♀; XII. 1921 (ex DUMMER), 2 ♀, all in BMNH. Associated with *S. galactina*, but excluded from the type-series as no male with abdomen is available for study.

Ethiopia: Merehan, Wante, 18. V. 1901, 1 ♀; Merehan, Korkoru 26—27. V. 1901, 1 ♀; Garra, Haro-Ali, 6. IV. 1901 (all C. V. ERLANGER), in BMNH. — Tanzania: Lake Manyara, 3150 ft, 28—30. IV. 1965, 8 ♀; *ibid.*, 8—19. VI. 1965, 1 ♂ (without abdomen), 3 ♀ (all Dr. J. SZUNYOGHY) in Hungarian Natural History Museum.

**Scopula isomala** PROUT

*Scopula isomala* PROUT, 1932, Novit. zool., **37**: 242; 1933 in: SEITZ, **16**: 71, pl. 8d.

Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♀.

Distribution. Kenya, S. E. Zaire, Malawi.

**Scopula elisabethae** PROUT

*Scopula elisabethae* PROUT, 1934, Rev. Zool. Bot. afr., **26**: 82.

Usa River, 3900 ft, 19. IV.—21. V. 1965, 8 ♂, 9 ♀; *ibid.*, 10—14. VII. 1965, 3 ♂, 2 ♀; IX. 1965—II. 1966, 4 ♂, 3 ♀. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1965, 1 ♂, 1 ♀.

Distribution. S. E. Zaire, Malawi.

**Scopula caducaria** (SWINHOE)

*Emmiltis caducaria* SWINHOE, 1904, Trans. ent. Soc. Lond., **1904**: 556.

*Scopula caducaria* (SWINHOE); PROUT, 1933, in: SEITZ, **16**: 71, pl. 7f.

Usa River, 3900 ft, 2—21. IV. 1965, 4 ♀. E. slope of Mt Meru, 5700 ft, 12. V. 1965, 3 ♀.

Distribution. Kenya, Uganda, Malawi.

**Scopula internata praeruptorum** PROUT

*Scopula internata praeruptorum* PROUT, 1920, Novit. zool., **27**: 293; 1933, in: SEITZ, **16**: 72, pl. 7f; 1934, in: STRAND, Lepid. Cat., **63**: 257, 258 (synonymy).

*Scopula internata* (GUENÉE); JANSE, 1935, **2** (3): 204, text-figs. 57, 58, pl. 7, fig. 6.

Usa River, 3900 ft, 26. IV.—21. V. 1965, 2 ♂, 2 ♀; *ibid.*, 10. VII. 1965, 2 ♀; *ibid.*, IX. 1965—II. 1966, 12 ♂, 1 ♀. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 5 ♂, 2 ♀; *ibid.*, 8. V. 1965, 1 ♀.

Distribution. Kenya, Uganda, Tanzania. The nominate subspecies occurs in South Africa.

**Scopula adelpharia** (PÜNGELER)

*Acidalia adelpharia* PÜNGELER, 1894, Stettin. ent. Ztg., **55**: 76.

*Scopula adelpharia* (PÜNGELER); PROUT, 1934, in: STRAND, Lepid. Cat., **63**: 262 (synonymy and figure references).



Lake Manyara, 3150 ft, 28. V. 1965, 1 ♂; *ibid.*, 18. VI. 1965, 1 ♀. Lake Sereri, 3150 ft 14—24. VIII. 1965, 2 ♂, 7 ♀; *ibid.*, 6. IX. 1965, 2 ♀. Usa River, 3900 ft, 4—20. V. 1965, 3 ♂ *ibid.*, IX. 1965—II. 1966, 5 ♂, 3 ♀.

*Distribution.* Israel, Aden, Somalia, Ethiopia.

#### *Scopula lactaria* (WALKER)

*Acidalia lactaria* WALKER, 1861, List Specimens lepid. Insects Colln Br. Mus., **22**: 744.

*Scopula lactaria* (WALKER); PROUT, 1934, in: STRAND, Lepid. Cat., **63**: 263 (synonymy and figure references).

*Scopula lactaria* (WALKER); JANSE, 1935, **2** (3): 205, text-figs. 57, 58, 61; pl. 7, fig. 3.

Lake Manyara, 3150 ft, 28. V.—9. VI. 1965, 2 ♀. Usa River, 3900 ft, 30. IV.—10. V. 1965, 4 ♂, 1 ♀; *ibid.*, IX. 1965—II. 1966, 3 ♂, 2 ♀.

*Distribution.* Equatorial Africa.

JANSE's text-fig. 57 illustrates one form of the cerata; in another the arms of the cerata are slender and of equal length, one-half of their length extending beyond the mappa.

#### *Scopula minorata minorata* (BOISDUVAL)

*Geometra minorata* BOISDUVAL, 1833, Nouv. Ann. Mus. Hist. nat., Paris, **2**: 263.

*Scopula minorata* (BOISDUVAL); PROUT 1934, in: STRAND, Lepid. Cat., **63**: 263; 1935, *ibid.*, **68**: 444 (synonymy).

*Acidalia ochroleucaria* HERRICH—SCHÄFFER, 1847, Syst. Bearbeitung Schmett. Eur., **3**: 24; 1844, 3: pl. 3, figs. 19—21 (non-binominal, as *ochroleucata*).

*Scopula ochroleucaria* (HERRICH—SCHÄFFER); PROUT, 1934; *ibid.*, **63**: 263; 1935, *ibid.*, **68**: 444 (synonymy).

*Scopula minorata* (BOISDUVAL); JANSE, 1935, **2** (3): 206, text-figs. 57, 58, 61, pl. 6, fig. 22.

*Acidalia antiloparia* WALLENGREN, 1863, Wien. ent. Monatsch., **7**: 151. *Syn. n.*

Lake Manyara, 3150 ft, 19—23. VI. 1965, 3 ♀. Lake Sereri, 3150 ft, 23—24. VIII. 1965, 3 ♂, 2 ♀. Usa River, 3900 ft, 15. III.—15. IV. 1965, 1 ♀; *ibid.*, 17. IV.—3. V. 1965, 8 ♂, 9 ♀; *ibid.*, 11—18. VII. 1965, 5 ♂, 3 ♀; *ibid.*, IX. 1965—II. 1966, 26 ♂, 18 ♀.

Through the courtesy of DR. P. DOUWES, University of Lund, I have been able to examine the male holotype of *Acidalia antiloparia* WALLENGREN; it has proved to be a synonym of *Scopula minorata* (BOISDUVAL).

#### *Scopula mascula* (BASTELBERGER)

*Acidalia mascula*, BASTELBERGER, 1909, Dt. ent. Z., **1909**: 318.

*Scopula mascula* (BASTELBERGER); PROUT, 1933, in: SEITZ, **16**: 75, pl. 8h.

Lake Sereri, 3150 ft, 6—23. IX. 1965, 4 ♀. Usa River, 3900 ft, 28—29. IV. 1965, 3 ♂; *ibid.*, IX. 1965—II. 1966, 1 ♂, 1 ♀.

*Distribution.* Kenya, Tanzania, Mozambique.

*Scopula paradelpharia* PROUT (1920), described from the Ivory Coast, is closely similar in colour, pattern and structure, differing in the form of the cerata. In *mascula* both arms extend to just beyond the mappa, the left arm slightly incurved apicad; in *paradelpharia* the left arm is three-fourths as long as the mappa and incurved apicad.

#### *Scopula magnidiscata* (WARREN) ? subsp.

*Emmiltis (Craspedia) magnidiscata* WARREN, 1904, Novit. Zool., **11**: 466.

*Scopula magnidiscata* (WARREN); PROUT, 1933, in: SEITZ, **16**: 74, pl. 7h (poor figure).

Usa River, 3900 ft, 2. V. 1965, 1 ♂; *ibid.*, IX. 1965—II. 1966, 6 ♂.

*Distribution.* Angola, Zambia.

Differs externally from the three Angolan specimens in the BMNH collection in the ivory to white ground colour of the wings, in place of pinkish buff. In the male genitalia the asymmetrical valves and ornamentation of the vesica are identical but the cerata differ. In the holotype the right arm is

straight and one-third as long as the mappa, the left arm is two-thirds as long as the mappa and slightly incurved apicad; in the Tanzanian male each arm is just subequal in length to the mappa, the left arm angled obtusely at one-third.

***Scopula latitans* PROUT**

*Scopula latitans* PROUT, 1920, Novit. zool., **27**: 298.

*Scopula latitans* PROUT; PROUT, 1933, in: SEITZ, **16**: 74, pl. 7h.

*Scopula latitans* PROUT; JANSE, 1935, **2** (3): 213, text-figs. 60—62 (labelled *nesciaria*), pl. 6, figs. 3, 16.

Lake Manyara, 3150 ft, 17—18. VI. 1965, 2 ♂. Usa River, 3900 ft, 10. VII. 1965, 1 ♂.

Distribution. Angola, Zaire, Kenya to Natal.

Closely similar in habitus and structure to *Scopula nesciaria* (WALKER, 1861) from Ceylon, India and Malaysia.

***Scopula africana* BERIO**

*Scopula africana* BERIO, 1937, Annali Mus. Civ. Stor. nat. Giacomo Doria, **58**: 180, plate.

Usa River, 3900 ft, 29. IV. 1965, 1 ♀; ibid., IX. 1965—II. 1966, 1 ♂.

Distribution. Somalia, Kenya. Known previously from only two specimens.

***Scopula internataria* (WALKER) ? subsp.**

*Acidalia internataria* WALKER, 1861, List Specimens lepid. Insects Colln Br. Mus., **22**: 746.

*Scopula internataria* (WALKER); PROUT, 1933, in: SEITZ, **16**: 74, pl. 7h.

*Scopula internataria* (WALKER); JANSE, 1935, **2** (3): 215, text-figs. 57, 58, 61, pl. 7, figs. 1, 4.

Usa River, 3900 ft, IX. 1965—II. 1966, 2 ♂.

Distribution. Ivory Coast, Sudan, Zaire, Uganda, Kenya, Tanzania, Malawi, Natal, Angola.

***Zygophyxia tornisecta* PROUT**

*Zygophyxia tornisecta* PROUT, 1916, Proc. zool. Soc. Lond., **1916**: 153; 1933, in: SEITZ, **16**: 75, pl. 7i.

Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♂.

Distribution. Ethiopia, Somalia.

The genitalia of the unique female holotype of *Zygophyxia palpata* PROUT (1932) from Kibwezi in Kenya appear to be identical with those of *Z. tornisecta*.

***Zygophyxia toquilla* sp. n.**

(Pl. 1, fig. 8; Pl. 7, figs. 58, 59, 61)

Vestiture and wings pale pinkish buff irrorate with fuscous; and sparsely with black; posterior half of medial area of forewing a deeper shade, approaching cinnamon; transverse fasciae, as illustrated, fuscous; discal spots minute, black.

Forewing: 7—9 mm.

♂ genitalia (Pl. 7, figs. 58, 59, 61). Anellus strongly sclerotized, apical half cowl-like and tapered apicad, the dorsal surface coarsely scobinate. Aedeagus slender and slightly sinuous; vesica with a slender tapered cornutus, equal in length to width of aedeagus. Eighth sternite as illustrated.



Closely similar to *Z. conscensa* (SWINHOE, 1886, Proc. zool. Soc. Lond., 1885: 863, pl. 57, fig. 8) occurring in India and Ceylon, from which it is most readily distinguished in the male genitalia by the form of the anellus, which in *conscensa* is of even width to its rounded apex and the dorsal surface is not scobinate.

Holotype ♂, Tanzania: Usa River, 3900 ft, 1965 (Dr. SZUNYOGHY), in Hungarian Natural History Museum. — Paratypes, Tanzania: Old Shinyanga, 4. V. 1952 (E. BURTT), 1 ♂. Kenya: Penita, 3500 ft, V. [19]20 (W. N. VAN SOMEREN), 1 ♂, both in BMNH.

#### *Zygophyxia relictata* (WALKER)

*Acidalia relictata* WALKER, 1866, List Specimens lepid. Insects Colln Br. Mus., 35: 1629.

*Zygophyxia relictata* (WALKER); PROUT, 1933, in: SEITZ, 16: 75, pl. 7i.

*Zygophyxia relictata* (WALKER); PROUT, 1934, in: STRAND, Lepid. Cat., 63: 278 (synonymy).

Lake Manyara, 3150 ft, 27. V.—23. VI. 1965, 2 ♀.

Distribution. Senegal, Sudan, Ethiopia, Kenya, Tanzania, Bahrain, Oriental region, Queensland.

#### *Idaea associata* (WARREN)

*Sterrrha associata* WARREN, 1897, Novit. zool., 4: 62.

*Ptychopoda exilinata* WARREN, 1897, ibid., 4: 224.

*Sterrrha associata* (WARREN); PROUT, 1933, in: SEITZ, 16: 78, pl. 7k.

*Sterrrha associata* (WARREN); JANSE, 1935, 2 (3): 233, text-fig. 67, pl. 5, fig. 30.

Lake Manyara, 3150 ft, 29. V.—10. VI. 1965, 4 ♂, 1 ♀.

Distribution. Natal, Transvaal, Mozambique, Rhodesia.

*Ptychopoda subscutulata* WARREN (1899), treated by PROUT, as a subspecies of *associata*, differs in having five cornuti instead of three; two are two-thirds as long as the aedeagus and three are equal in length to its width.

#### *Idaea leptatibia* sp. n.

(Pl. 1, fig. 10; Pl. 7, figs. 62, 66)

♂. Vestiture glossy, yellowish grey (Pl. 4, B2). Wings light buff suffused with yellowish grey, more densely on forewing along costa in proximal third and distad of the postmedial fascia; transverse fascia black, as illustrated; discal spots black; cilia with minute black dots at the vein ends.

Hind tibia not dilate; tarsus equal in length to tibia.

Forewing: 5—6 mm.

♂ genitalia (Pl. 7, figs. 62, 66). Uncus and gnathus of equal length, the apex of each smoothly rounded; gnathus rather more than twice width of uncus. Vesica with a strongly sclerotized apically tapered cornutus, three-fourths as long as aedeagus.

Closely related to *I. subscutulata* (WARREN, 1899), *associata* (WARREN, 1897), *arcuata*, *apoa* and *pediculata* (all FLETCHER, 1958). Distinguished externally by the form of the postmedial fascia on the forewing, which is almost straight, from costa to vein  $M_3$ , and by the long, slender hind tarsus. In the male genitalia *leptatibia* is distinguished by the shorter, broader uncus and gnathus and by the long cornutus.



Holotype ♂, Tanzania: Lake Sereri, 3150 ft, 27. VIII. 1965 (Dr. SZUNYOGHY), in Hungarian Natural History Museum. — Paratype, Tanzania: Old Shinyanga, 23. V. 1954 (E. BURTT), 1 ♂ in BMNH.

***Idaea bura* (PROUT)**

*Sterrhia bura* PROUT, 1932, Mém. Soc. zool. Fr., **29**: 410.

Closely related to *Idaea laciniata* (WARREN, 1902), from which it may be distinguished in the male genitalia; *laciniata* has a thorn-like process extending from the mid-apical margin of the valve and the cornutus in only one-half as long as the aedeagus. The female of *laciniata* is not known; the specimen recorded by FLETCHER 1958, Ruwenzori Expedition 1952, **1**: 98 probably represents *bura* PROUT.

Usa River, 3900 ft, 15. III.—15. IV. 1965, 1 ♀; *ibid.*, 17—30. IV. 1965, 5 ♂, 2 ♀; *ibid.*, 1—21. V. 1965, 4 ♂, 5 ♀; *ibid.*, 10—13. VII. 1965, 2 ♂, 2 ♀; *ibid.*, IX. 1965—II. 1966, 28 ♂, 6 ♀.  
Distribution. Kenya.

***Idaea pulveraria pulveraria* (SNELLEN)**

*Acidalia pulveraria* SNELLEN, 1872, Tijdschr. Ent., **15**: 75, pl. 6, fig. 7.

*Ptychopoda inobtrusa* WARREN, 1898, Novit. zool., **5**: 243.

*Sterrhia subculia* PROUT; JANSE, 1935, **2** (3): 237, text-fig. 67, pl. 5, fig. 4.

Usa River, 3900 ft, 29. IV. 1965, 1 ♀; *ibid.*, 20—21. V. 1965, 2 ♂, 1 ♀. E. slope of Mt Meru, 5700 ft, 12. V. 1965, 2 ♂.

Distribution. West Africa, Sierra Leone to Nigeria, Zaire, Uganda, Kenya. Represented in S. Africa by subsp. *subculia* (PROUT, 1916) and in Madagascar by subsp. *agrammaria* (MABILLE, 1900).

***Idaea umbricosta depleticosta* (PROUT)**

*Ptychopoda umbricosta depleticosta* PROUT, 1916, Ann. Transv. Mus., **5**: 164.

*Sterrhia umbricosta* (PROUT); PROUT, 1934 in: STRAND, Lepid. Cat., **63**: 426 (synonymy and figure references).

*Sterrhia umbricosta* (PROUT); JANSE, 1935, **2** (3): 240, text-figs. 66, 68, pl. 5, fig. 5.

Lake Sereri, 3150 ft, 22. VIII. 1965, 1 ♀.

Distribution. Kenya. The nominate subspecies occurs in S. Africa and Malawi.

***Idaea lilliputaria* (WARREN)**

*Ptychopoda lilliputaria* WARREN, 1902, Novit. zool. **9**: 502.

*Sterrhia lilliputaria* (WARREN); PROUT, 1933, in: SEITZ, **16**: 81, pl. 7m (poor figure).

*Sterrhia lilliputaria* (WARREN); JANSE, 1935, **2** (3): 244, text-fig. 67, pl. 5, fig. 19.

Lake Sereri, 3150 ft, 22. VIII. 1965, 1 ♀.

Distribution. Angola, S. Africa, Malawi, Tanzania.

***Idaea enargeia* sp. n.**

(Pl. 1, fig. 9; Pl. 7, figs. 63—65)

♂♀. Vestiture and wings light buff sparsely irrorate with fuscous; anterior half of hindwing paler and almost devoid of dark irroration. Transverse fasciae fuscous; those on forewing broadly marked on subcostal vein and at tornus, weakly marked elsewhere; those on hindwing broadly marked along posterior margin, with an especially large and conspicuous spot at tornus; discal spots fuscous; cilia with a black spot at the end of each vein.

Forewing: 7.5—9 mm.

♂ genitalia (Pl. 7, figs. 63, 64), ♀ genitalia (Pl. 7, fig. 65).

Closely similar to *I. buchanani* (PROUT, 1932), from Damagarim (Zinder), Niger, to *I. malescripta* (WARREN, 1897) and to *I. subterfundata* (PROUT, 1922) from East and S. Africa. Distinguished from the latter two species by the paler colour of the wings and from all three by the structure of the genitalia. The form of each valve, with a strongly sclerotized, ventrally curved spine arising just ventrad of the rounded, membranous apex is diagnostic and may be seen *in situ*, without dissection.

Holotype ♂, Tanzania: Old Shinyanga, 5. V. 1954 (E. BURTT), in BMNH. — Paratypes. Tanzania: Old Shinyanga, 28. I. 1954, 1 ♀; *ibid.*, 3—12. II. 1954, 7 ♂; 7. IV. 1954, 1 ♂; 5—30. V. 1954, 8 ♂, 2 ♀; 6. VI. 1954, 1 ♀; 7—13. XII. 1954, 3 ♂, all in BMNH; Lake Manyara, 3150 ft, 13. IV. 1965 (DR. J. SZUNYOGHY), 1 ♀; *ibid.*, 1. V. 1965, 1 ♀; 27. V. 1965, 1 ♀; Katesh, 5900 ft, 26. VI. 1965 (DR. SZUNYOGHY), 1 ♂, all in Hungarian Natural History Museum.

#### *Rhodometra sacraria* (LINNAEUS)

*Phalaena sacraria* LINNAEUS, 1767, Syst. Nat. (Edn. 12) 1 (2): 863.

*Rhodometra sacraria* (LINNAEUS); PROUT, 1935, in: STRAND, Lepid. Cat., 68: 433 (synonymy).

Lake Manyara, 3150 ft, 27. V.—21. VI. 1965, 6 ♂, 7 ♀. Usa River, 3900 ft, 15. III.—15. IV. 1965, 1 ♀; *ibid.*, 29. IV.—21. V. 1965, 5 ♂, 10 ♀; 5. VI. 1965, 1 ♂; 15. VII. 1965, 1 ♂; IX. 1965—II. 1966, 1 ♂. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 4 ♂, 2 ♀. W. slope of Mt Meru, Olkokola, 8700 ft, 16. VI. 1965, 1 ♂.

Distribution. Canary Islands, Madeira, St. Helena, Europe, Western Asia, Africa, Madagascar.

#### *Rhodometra lucidaria* (SWINHOE)

*Pseudosterrha lucidaria* SWINHOE, 1904, Trans. ent. Soc. Lond., 1904: 566.

*Sterrrha plectaria* GUENÉE var. *roseofimbriata* THIERRY-MIEG, 1911, Annls. Soc. ent. Belg., 54: 465.

*Rhodometra lucidaria* (SWINHOE); PROUT, 1933, in: SEITZ, 16: 82, pl. 7m.

Usa River, 3900 ft, 18. V. 1965, 1 ♂. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 2 ♀.

Distribution. Arabia, Eritrea, Ethiopia to Malawi, Uganda, Zaire.

### LARENTIINAE

#### *Xanthorhoe procne* (FAWCETT)

*Cidaria procne* FAWCETT, 1916, Proc. zool. Soc. Lond., 1916: 730, pl. 1, fig. 8.

*Xanthorhoe procne* (FAWCETT); PROUT, 1933, in: SEITZ, 16: 84, pl. 9a.

Lake Manyara, 3150 ft, 16. VI. 1965, 1 ♀. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂, 28 ♀. W. slope of Mt Meru, Olkokola, 8700 ft, VII. 1965, 17 ♂, 17 ♀; *ibid.*, 6—27. XII. 1965, 3 ♂, 16 ♀.

Distribution. E. Zaire, Uganda, Kenya, N. Tanzania.

#### *Xanthorhoe albodivisaria* (AURIVILLIUS)

*Onychia albodivisaria* AURIVILLIUS, 1910, in: SJÖSTEDT, Wiss. Ergebn. schwed. zool. Expedn Kilimandjaro Meru 1905—1906, 9 (Lepid.): 44, pl. 2, fig. 13.

W. slope of Mt Meru, Olkokola, 8700 ft, 20. VII. 1965, 1 ♂.

Distribution. Tanzania, Kilimandjaro and Meru.

#### *Xanthorhoe transjugata* PROUT

*Xanthorhoe transjugata* PROUT, 1923, Novit. zool., 30: 193; 1933, in: SEITZ, 16: 85, pl. 9c (poor figure).

*Xanthorhoe transjugata* PROUT; JANSE, 1933, 2 (1): 93, text-fig. 25, pl. 1, fig. 34.

*Xanthorhoe mikenaria* DEBAUCHE, 1938, Expl. Parc Natn. Albert, Mission G. F. de Witte, 1933—35, 20: 22, pl. 1, fig. 3.



E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 2 ♂, 1 ♀; *ibid.*, 14. V. 1965, 1 ♂. W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965, 2 ♂, 2 ♀.

*Distribution.* E. Zaire, Uganda, Kenya, Tanzania, S. Africa, Cape Province.

***Xanthorhoe argenteolineata* (AURIVILLIUS)**

*Cidaria argenteolineata* AURIVILLIUS, 1910, in: SJÖSTEDT, Wiss. Ergebn. schwed. zool. Expedn Kilimandjaro Meru, 1905—1906, **9** (Lepid.): 46, pl. 2, fig. 17.

*Xanthorhoe argenteolineata* (AURIVILLIUS); PROUT, 1933, in: SEITZ, **16**: 85, pl. 10a.

W. slope of Mt Meru, Olkokola, 8700 ft, VII. 1965, 7 ♂, 12 ♀; *ibid.*, 6—27. XII. 1965, 28 ♂, 57 ♀.

*Distribution.* Tanzania, Kilimandjaro; Kenya, Aberdare Range.

The long series collected by DR. SZUNYOGHY has confirmed PROUT's comment in SEITZ on the variation of colour and pattern in this species. In the male the medial area of the forewing in several examples is filled with fuscous suffusion only anterior of the cubital vein. In the female the areas proximad and distad of the medial area may be green or cinnamon brown, or buff irrorate with fuscous. The genitalia of these forms appear to be identical.

***Xanthorhoe exorista* PROUT**

*Xanthorhoe exorista* PROUT, 1922, Novit. zool., **29**: 351; 1933, in: SEITZ, **16**: 86, pl. 9c.

*Xanthorhoe exorista* PROUT; JANSE, 1933, **2** (1): 89, text-fig. 25, pl. 1, fig. 31.

Usa River, 3900 ft, 17—18. V. 1965, 1 ♂, 1 ♀; *ibid.*, 14. VII. 1965, 1 ♀; 6. VIII. 1965, 1 ♀; IX. 1965—II. 1966, 4 ♂, 10 ♀. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 2 ♂, 8 ♀.

*Distribution.* Zaire, Uganda, East Africa, Ethiopia to Cape Province.

***Pseudolarentia megalaria* (GUENÉE)**

*Eubolia megalaria* GUENÉE, 1857, in: BOISDUVAL and GUENÉE, Hist. nat. Insectes, Spec. gén. Lépid., **10**: 489.

*Eubolia atroclarata* WALKER, (1863) 1862, List Specimens lepid. Insects Colln Br. Mus., **26**: 1737.

*Larentia megalaria* (GUENÉE); PROUT, 1933, in: SEITZ, **16**: 88, pl. 9g.

*Ortholitha megalaria* (GUENÉE); JANSE, 1933, **2** (1): 68, text-fig. 21, pl. 1, fig. 8.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂. W. slope of Mt Meru, Olkokola, 8700 ft, 16—19. VII. 1965, 2 ♂, 1 ♀.

*Distribution.* Uganda, East Africa, Ethiopia to Cape Province.

***Pseudolarentia monosticta* (BUTLER)**

*Ortholitha monosticta* BUTLER, 1894, Proc. zool. Soc. Lond., **1894**: 592, pl. 37, fig. 9.

*Larentia monosticta* (BUTLER); PROUT, 1933, in: SEITZ, **16**: 88, pl. 9g.

*Pseudolarentia monosticta* (BUTLER); FLETCHER, 1958, Veröff. zool. StSamml. Münch., **5**: 129 (synonymy).

Lake Manyara, 3150 ft, 16. VI. 1965, 2 ♂. W. slope of Mt Meru, Olkokola, 8700 ft, 18—21. VII. 1965, 1 ♂, 5 ♀; *ibid.*, 6—27. XII. 1965, 55 ♂, 34 ♀.

*Distribution.* Ethiopia, Kenya, Uganda, Tanzania.

***Orthonama obstipata* (FABRICIUS)**

*Phalaena obstipata* FABRICIUS, 1794, Ent. Syst., **3** (2): 199.

*Nyctosea obstipata* (FABRICIUS); JANSE, 1933, **2** (1): 95, text-fig. 27, pl. 2, figs. 9, 11.

*Nyctosea obstipata* (FABRICIUS); FLETCHER, 1958, Veröff. zool. StSamml. Münch., **5**: 128. (synonymy and distribution).

Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♂.

***Larentia nictitaria* HERRICH-SCHÄFFER**

*Larentia nictitaria* HERRICH-SCHÄFFER, 1855, Samml. neuer oder wenig bekannter aussereur. Schmett., **1** (1): pl. 78, fig. 451.

*Larentia nictitaria* HERRICH-SCHÄFFER; PROUT, 1933, in: SEITZ, **16**: 88, pl. 9g.



*Ortholitha nictitaria* (HERRICH-SCHÄFFER); JANSE, 1933, **2** (1): 70, text-fig. 21, pl. 1, fig. 11.  
*Onycha nictitaria* (HERRICH-SCHÄFFER) var. *cineraria* AURIVILLIUS, 1910, in: SJÖSTEDT, Wiss. Ergebn. schwed. zool. Expedn Kilimandjaro Meru 1905—1906, **9** (Lepid.): 44.

W. slope of Mt Meru, Olkokola, 8700 ft, 18. VII. 1965, 1 ♀; *ibid.*, 6—27. XII. 1965, 10 ♀.  
 Distribution. Tanzania, Malawi, S. Africa. Represented in Kenya by *Plerocymia arenaria* WARREN, (1902).

***Ecpetala obtusa meruana* (AURIVILLIUS)**

*Larentia meruana* AURIVILLIUS, 1910, in: SJÖSTEDT, Wiss. Ergebn. schwed. zool. Expedn Kilimandjaro Meru, 1905—1906, **9** (Lepid.): 46.

E. slope of Mt Meru, 5700 ft, 12. V. 1966, 1 ♀. W. slope of Mt Meru, Olkokola, 8700 ft, 18. VII. 1965, 1 ♂; *ibid.*, 6—27. XII. 1965, 1 ♀.

Distribution. Tanzania, Mt Meru. Represented in Kenya by *E. o. obtusa* (WARREN, 1902) and in Western Uganda by *E. obtusa celaena* FLETCHER, 1958.

***Ecpetala unduligera* (AURIVILLIUS)**

*Cidaria unduligera* AURIVILLIUS, 1910, in: SJÖSTEDT, Wiss. Ergebn. schwed. zool. Expedn Kilimandjaro Meru, 1905—1906, **9** (Lepid.): 47, pl. 2, fig. 19.

W. slope of Mt Meru, Olkokola, 8700 ft, 18. VII. 1965, 1 ♂.

Distribution. Tanzania, Mt Meru.

***Haplolabida sjoestedti sjoestedti* (AURIVILLIUS)**

*Larentia sjoestedti* AURIVILLIUS, 1910, in: SJÖSTEDT, Wiss. Ergebn. schwed. zool. Expedn Kilimandjaro Meru, 1905—1906, **9** (Lepid.): 45, pl. 2, fig. 20.

W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965, 1 ♀.

Distribution. Tanzania, Kilimandjaro. Represented on Ruwenzori by subsp. *altipeta* (PROUT, 1921).

***Disclisioprocta natalata* (WALKER)**

*Scotosia natalata* WALKER, 1862, List Specimens lepid. Insects Colln Br. Mus., **25**: 1351.

*Disclisioprocta natalata* (WALKER); FLETCHER, 1958, Veröff. zool. StSamml. Münch., **5**: 128 (synonymy and distribution).

*Xanthorhoe natalata* (WALKER); PROUT, 1933, in: SEITZ, **16**: 86, pl. 9d.

*Camptogramma natalata* (WALKER); JANSE, 1934, **2** (2): 109, text-fig. 34, pl. 2, fig. 23.

Lake Manyara, 3150 ft, 17. VI. 1965, 2 ♂. Lake Sereri, 3150 ft, 24. VIII. 1965, 1 ♂. Usa River, 3900 ft, IX. 1965—II. 1966, 21 ♂, 14 ♀.

***Rheumaptera relictata* (HERBULOT)**

*Eulype relictata* HERBULOT, 1953, Bull. Soc. ent. Fr., **1953**: 9.

W. slope of Mt Meru, Olkokola, 8700 ft, 18—19. VII. 1965, 2 ♀; *ibid.*, 6—27. XII. 1965, 1 ♂, 8 ♀.

Distribution. Kenya, Mt Kenya and Aberdare Range.

***Mimoclystia corticearia* (AURIVILLIUS) comb. n.**

*Triphosa corticearia* AURIVILLIUS, 1910, in: SJÖSTEDT, Wiss. Ergebn. schwed. zool. Expedn Kilimandjaro Meru, 1905—1906, **9** (Lepid.): 43, pl. 2, fig. 16.

W. slope of Mt Meru, Olkokola, 8700 ft, 16—19. VII. 1965, 3 ♂.

Distribution. Tanzania, Kilimandjaro.

***Mimoclystia cancellata* (WARREN)**

*Perizoma cancellata* WARREN, 1899, Novit. zool., **6**: 299.

*Mimoclystia cancellata* (WARREN); PROUT, 1935, in: SEITZ, **16**: 95, pl. 10f.

Usa River, 3900 ft, 12—19. VII. 1965, 2 ♂. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂, 1 ♀; *ibid.*, 8. V. 1965, 2 ♂.

Distribution. Uganda, Kenya, Tanzania.

**Mimoclystia toxeres** sp. n.

(Pl. 2, figs. 13, 14; Pl. 8, figs. 67, 76)

Vestiture yellowish grey (Pl. 4, B2, putty colour) irrorate with greyish brown. Forewing: antemedial third yellowish grey, costa and transverse fasciae greyish brown; medial area densely greyish brown proximally and distally, paler and tinged with violet medially; ante- and postmedial fasciae white, shaped as in figure; area distad of postmedial fascia white irrorate with greyish brown, densely at apex; discal spot greyish brown. Hindwing light buff irrorate with greyish brown along anal margin, where the transverse fasciae are indistinctly marked.

The female differs in the presence of a slender, amber-coloured fascia proximad of the antemedial and another distad of the postmedial fascia on the forewing.

In one female specimen the medial area of the forewing is light brown irrorate with dull red; proximad of it, between the subbasal and the antemedial fasciae is a band of reddish orange; another similarly coloured band is situated distad of the postmedial fascia, broadened at apex and tornus, and angle of hindwing suffused with reddish orange.

Forewing length. ♂ 16.5—17.5 mm; ♀ 18 mm.

♂ genitalia (Pl. 8, fig. 67). Apparently identical with those of *Mimoclystia thermochroa* (HAMPSON, 1909), known only from two males from Ruwenzori. ♀ genitalia (Pl. 8, fig. 76).

Most closely related to *M. thermochroa* (HAMPSON), but readily distinguished by colour and wing-pattern, especially by the boldly outcurved form of the postmedial fascia on the forewing, which are diagnostic.

Holotype ♂, Tanzania: W. slope of Mt. Meru, Olkokola, 8700 ft, 6—27. XII. 1965 (DR. J. SZUNYOGHY). — Paratypes, Tanzania: holotype data, 3 ♂, 3 ♀; *ibid.*, 16—18. VII. 1965, 3 ♀.

**Piercia deceptata** FLETCHER

*Piercia deceptata* FLETCHER, 1958, Ruwenzori Expedn 1952 1 (6): 114, figs. 26, 174—177.

W. slope of Mt. Meru, Olkokola, 8700 ft, 16—20. VII. 1965, 9 ♂; *ibid.*, 6—27. XII. 1965, 29 ♂, 11 ♀. E. slope of Mt. Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♀; *ibid.*, 8. V. 1965, 1 ♂.

Distribution. Kenya, Mt. Kenya, and Aberdare Range.

**Piercia fumitacta** (WARREN)

*Tephroclystia fumitacta* WARREN, 1903, Novit. zool., 10: 274.

*Piercia fumitacta* (WARREN); PROUT, 1935, in: SEITZ, 16: 97, pl. 10i.

E. slope of Mt. Meru, 5700 ft. 21. I.—1. II. 1966, 5 ♂.

Distribution. Kenya.

**Piercia bryophilaria** (WARREN)

*Tephroclystia bryophilaria* WARREN, 1903, Novit. zool., 10: 274.

*Piercia bryophilaria* (WARREN); JANSE 1933, 2 (1): 64, (as *bryophilaria*) text-fig. 18, pl. 3, fig. 19.

*Piercia bryophilaria* (WARREN); PROUT, 1935, in: SEITZ, 16: 98, pl. 10i.



E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 3 ♀. W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965, 1 ♀.

**Distribution.** East Africa, Kenya to Cape Province.

***Eupithecia dohertyi dohertyi* PROUT**

*Eupithecia thomasina dohertyi* PROUT, 1935, in: SEITZ, 16: 101, pl. 11b.

*Eupithecia dohertyi* PROUT; FLETCHER, 1951, Ann. Mag. nat. Hist. (12) 4: 1009, figs. 9, 15.

W. slope of Mt Meru, Olkokola, 8700 ft, 16. VII. 1965, 1 ♀; *ibid.*, 6—21. XII. 1965, 6 ♂, 2 ♀.

**Distribution.** Uganda, Kenya. Represented in the ericaceous zone of Ruwenzori by subsp. *fulvata* FLETCHER (1951) and on Mt Cameroun by subsp. *fumata* FLETCHER (1951).

***Eupithecia dilucida* (WARREN)**

*Tephroclystia dilucida* WARREN, 1899, Novit. zool., 6: 297.

*Eupithecia dilucida* (WARREN); FLETCHER, 1951, Ann. Mag. nat. Hist. (12) 4: 1011, 1012, figs. 10, 19.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂, 2 ♀. W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965, 1 ♂, 3 ♀.

**Distribution.** Cameroun, Mt Cameroun; Kenya, Tanzania, Natal.

***Eupithecia nigribasis* (WARREN)**

*Tephroclystia nigribasis* WARREN, 1902, Novit. zool., 9: 511.

*Eupithecia nigribasis* (WARREN); FLETCHER, 1951, Ann. Mag. nat. Hist. (12) 4: 1011, figs. 1, 26.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 2 ♀. W. slope Mt Meru, Olkokola, 8700 ft, 16—18. VII. 1965, 1 ♂, 1 ♀; *ibid.*, 6—27. XII. 1965, 10 ♂, 41 ♀.

**Distribution.** Fernando Po, Cameroun, Mt Cameroun, Kenya, Tanzania.

***Eupithecia astales* sp. n.**

(Pl. 2, fig. 17; Pl. 8, figs. 68—70, 74, 75)

♀. Frons and head light brown irrorate with brownish grey. Thorax black. Abdomen: segments 1—3 black, segment 2 white-ringed; remainder as head. Forewing: proximal third brownish grey to dark grey, with some light scaling at inner margin; apical and tornal areas as illustrated, brownish grey (Pl. 6, F2) to dark grey; anterior half of antemedial fascia white; remainder of wing light brown (Pl. 6, D 6, cinnamon brown). Hindwing light buff suffused terminad with light grey. Forewing length. 9—10.5 mm.

♀ genitalia (Pl. 8, figs. 74, 75). Sterigma and ductus bursae membranous; corpus bursae shaped and ornamented as illustrated.

A uniformly coloured and patterned series, closely similar to, but shorter in wingspan than, *E. nigribasis* (WARREN) ab. *carnea* (WARREN). The form and ornamentation of the genitalia are diagnostic.

Holotype ♀, Tanzania: E. slope of Mt Meru, 5700 ft, 12. V. 1965 (DR. J. SZUNYOGHY). — Paratypes, Tanzania: holotype data, 1 ♀; *ibid.*, 21. I.—1. II. 1966, 5 ♀.

Four male specimens from the western slope of Mt Meru, taken at a higher elevation, are tentatively associated with *astales*, but excluded from the type-series.



In the genitalia (Pl. 8, figs. 68—70) the valve is tapered to a narrowly rounded apex; the uncus is slightly tapered from base to rounded apex, which bears a ventrally inclined, short thorn-like tip. The vesica bears three cornuti; two are stout, longitudinally ribbed and strongly sclerotized, each three-fifths as long as the aedeagus; the third is broad and irregularly based, rounded at apex; three-fourths as long as the aedeagus and with the apical two-fifths scobinate.

Forewing length. 10—11 mm.

Tanzania. W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965 (Dr. J. SZUNYOGHY), 4 ♂.

***Eupithecia nigrataenia* sp. n.**

(Pl. 2, fig. 18; Pl. 8, figs. 71—73, 77)

♀. Vestiture light to dark grey; metathorax and second abdominal segment black; first abdominal segment often slenderly ringed posteriorly with white. Forewing: basal third light grey irrorate with dark grey to black; a broad, dark grey to black transverse band, inclined distad in the submedial fold, extends from one-third to one-half of wing; postmedial fascia broad and sharply marked from costa to discal fold, then slender to posterior margin dark grey to black, broken in some examples in the discal area; a broad subterminal shade from costa to discal fold, then broken and diffuse from vein  $Cu_2$  to posterior margin, dark grey to black; termen broadly light brown irrorate with dark grey to black; remainder of wings light brown varyingly irrorate with black. In two examples the area on the forewing between the broad dark transverse band and the broad subterminal shade is white. Hindwings light buff suffused with grey terminad.

Forewing length. 11—12.5 mm.

♀ genitalia (Pl. 8, fig. 77). Ductus bursae with a weakly sclerotized, incomplete collar, broken ventrally, situate just posterior of the corpus bursae which is ornamented as illustrated.

Distinguished externally by the well defined, dark transverse band of the forewing and structurally by the form of the sclerotized ductus bursae and the form and ornamentation of the corpus bursae.

Holotype ♀, Tanzania: W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965 (Dr. J. SZUNYOGHY). — Paratypes, 15 ♀ with same data.

A single male specimen, bearing the same data as the type-series, is tentatively associated with *nigrataenia*, but excluded from the type-series.

In colour and pattern it is similar to the two white-marked paratypes referred to in the above description. In the genitalia (Pl. 8, figs. 71—73) the uncus is of even width to the broadly rounded apex which bears a thorn-like

projection from the tip, inclined ventrad towards a second projection from two-thirds ventral surface. Vesica with cornuti similar to those of *astales*, but the tapered cornuti are more slender and the third is not scobinate.

Forewing length. 11.5 mm.

***Eupithecia tetraglena* PROUT**

*Eupithecia tetraglena* PROUT, 1932, Mém. Soc. zool. Fr., **29**: 447.

W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965, 1 ♂, 12 ♀.

Distribution. Kenya, Aberdare Range and Mt Elgon. Represented at 3500—4500 m. on Mt Kilimandjaro by subsp. *amplior* FLETCHER (1958).

***Eupithecia medilunata* PROUT**

*Eupithecia medilunata* PROUT, 1932, Mém. Soc. zool. Fr., **29**: 450.

W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965, 2 ♀.

Distribution. Kenya, Aberdare Range and Mt Elgon. Represented at 3500—4500 m. on Mt Kilimandjaro by subsp. *crassior* FLETCHER (1958).

***Eupithecia isopsaliodes* sp. n.**

(Pl. 1, figs. 11, 12; Pl. 9, figs. 78—81)

♂. Antenna lamellate and ciliate cilia equal in length to diameter of shaft. Vestiture light brown irrorate with dark brown. Forewing: proximal half light brown (Pl. 5, D 6, oak brown) lightly irrorate with fuscous along costa, median vein and posterior margin; distal half light brown, patterned as illustrated with light yellow; some white scales at lower angle of cell and in the three conspicuous subterminal spots anterior of vein  $M_3$ . Hindwing light buff, suffused with greyish brown at base and in terminal third. Cilia on both wings fuscous in proximal half, buff distally. The female differs in having shorter antennal cilia and more extensive light yellow to golden coloration on the forewing; some black scaling is present in the small white areas at the lower angle of the cell and proximad of the white and light yellow subterminal spots anterior of vein  $M_3$ . The hindwing is less suffused with fuscous than in the male.

Forewing length. ♂ 11 mm; ♀ 11—12.5 mm.

♂ genitalia (Pl. 9, figs. 78, 79, 81), ♀ genitalia (Pl. 9, fig. 80).

Closely related to *E. medilunata* PROUT (1932), *E. tetraglena* PROUT (1932) and to *E. isotenes* PROUT (1932). Distinguished externally by the striking colour and pattern, which is reminiscent of a New World *Psaliodes* GUENÉE, 1857. Distinguished from its closest relative, *medilunata*, in the male by the form of the eighth sternite and in the female by the form and pattern of ornamentation of the corpus bursae.

Holotype ♂, Tanzania: W. slopes of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965 (DR. J. SZUNYOGHY). — Paratypes, Tanzania: W. slope of Mt Meru, Olkokola, 8700 ft, 18. VII. 1965, 1 ♀; *ibid.*, 6—27. XII. 1965, 2 ♂, 6 ♀.



**Eupithecia proflua proflua** PROUT

*Eupithecia proflua* PROUT, 1932, Mém. Soc. zool. Fr., **29**: 458.

W. slope Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965, 14 ♂, 8 ♀.

Distribution. Tanzania, Mt Kilimandjaro. Represented in Kenya, by subsp. *subvincta* PROUT, 1932.

Distinguished from *E. mendosaria* SWINHOE, with which it occurs on Mt Meru, by the pattern of the forewing; the discal spot is black and well marked; black irroration is present in the posterior half of the discal area; the anterior half of the discal area is usually tawny. The forewing of *E. mendosaria* is pale grey, irrorate with dark brown; the discal spot is rarely discernible.

**Eupithecia mendosaria** (SWINHOE)

*Tephroclystia mendosaria* SWINHOE, 1904, Trans. ent. Soc. Lond., **1904**: 572.

W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965, 23 ♂, 14 ♀.

Distribution. Ethiopia, Kenya, Rhodesia, Lesotho (Basutoland).

**Eupithecia psiadiata** TOWNSEND

*Eupithecia psiadiata* TOWNSEND, 1952, Jl. E. Afr. nat. Hist. Soc., **21**: 69, figs.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂, 2 ♀.

Distribution. Kenya.

**Eupithecia regulosa** (WARREN)

*Tephroclystia regulosa* WARREN 1902, Novit. zool., **9**: 512.

*Eupithecia regulosa* (WARREN); PROUT, 1937, in: SEITZ, **16**: 106, pl. 11f (poor figure).

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 2 ♂, 6 ♀.

Distribution. Uganda, Kenya, Tanzania, Transvaal, Natal.

**Eupithecia hypophasma** PROUT

*Eupithecia hypophasma* PROUT, 1913, Ann. Transv. Mus., **3**: 207, pl. 12, fig. 3.

*Eupithecia hypophasma* PROUT; JANSE, 1933, **2** (1): 35, text-fig. 11, pl. 3, fig. 12.

*Eupithecia hypophasma* PROUT; PROUT, 1937, in: SEITZ, **16**: 105, pl. 11f (poor figure).

W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965, 2 ♀.

Distribution. Kenya, Transvaal, Cape Province.

**Eupithecia zingiberiata** FLETCHER

*Eupithecia zingiberiata* FLETCHER, 1956, Proc. R. ent. Soc. Lond., (B) **25**: 38, pl. 2, fig. 15, pl. 6, fig. 55.

Lake Manyara, 3150 ft, 28. V. 1965, 1 ♀.

Distribution. Kenya.

**Eupithecia vinacea** FLETCHER

*Eupithecia vinacea* FLETCHER, 1956, Proc. R. ent. Soc. Lond., (B) **25**: 39, pl. 2, fig. 14, pl. 6, figs. 51, 54.

W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965, 1 ♂.

Distribution. Kenya, Mt Elgon.

**Eupithecia phaiosata** sp. n.

(Pl. 2, fig. 19; Pl. 9, figs. 82—85)

♂. Forewing pale brownish orange (Pl. 6, C6, caramel) in discal area, distad of discocellulars; remainder of wing grey, irregularly irrorate with fuscous black, densely along basal half of costa and as a broad, diffuse post-



medial fascia extending from three-fourths costa to vein  $M_2$ ; subterminal fascia marked on veins by fuscous black spots or streaks edged distally with white, that on submedian fold large and conspicuous; discal spots fuscous black edged distally with white. Hindwings grey, anal margin irrorate with fuscous, densely at anal angle.

♀. Larger than male; forewing browner, less densely irrorate with fuscous black.

Forewing length. ♂ 10 mm; ♀ 10.5—12 mm.

♂ genitalia (Pl. 9, figs. 82—84), ♀ genitalia (Pl. 9, fig. 85).

Related to the South African species *E. infausta* PROUT (1922) and *E. infelix* PROUT (1917), to *E. multispinata* FLETCHER (1951) from Mt Cameroun and to the East African *E. celatisigna* (WARREN, 1902); distinguished from the East and South Africa species by the straight anterior margin of the tegumen, which in the other three species is deeply excised medially; distinguished from *multispinata* by the presence of two or three cornuti equal in length to the width of the aedeagus and three to five shorter cornuti; in *multispinata* there is one similarly long and two short cornuti.

The female genitalia of *celatisigna*, *infelix* and *multispinata* are closely similar.

Holotype ♂, Tanzania: W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965, (DR. SZUNYOGHY). — Paratypes, 3 ♂, 39 ♀ with same data.

#### *Eupithecia celatisigna* (WARREN)

*Tephroclystia celatisigna* WARREN, 1902, Novit. zool., **9**: 510.

*Tephroclystia lugubriaria* SWINHOE, 1904, Trans. ent. Soc. Lond., **1904**: 573.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♀.

Distribution. Kenya, Uganda.

#### *Chloroclystis* sp.

W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965, 1 ♀. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♀ (without abdomen). Related to *Chloroclystis protrusata* WARREN, 1902.

#### *Chloroclystis nanula* MABILLE

*Cidaria nanula* MABILLE, 1900, Annls Soc. ent. Fr., **68**: 737.

*Gullaca derasata* BASTELBERGER, 1905, Ent. Z., Guben, **19**: 77.

*Chloroclystis chlamydata* JOANNIS, 1906, Annls Soc. ent. Fr., **75**: 178, pl. 9, fig. 9.

*Chloroclystis grisea* WARREN sensu JANSE, 1933, **2** (1): 24, text-fig. 10 (♂ genitalia).

*Chloroclystis derasata* BASTELBERGER; PROUT, 1937, in: SEITZ, **16**: 110, pl. 12a, ♀ and pl. 12b, ♂ (as *chlamydata*).

Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♂.

Distribution. Gambia, Angola, East Africa, Ethiopia to Natal; Madagascar, Mauritius.

#### *Chloroclystis muscosa* (WARREN)

*Gnamptomia muscosa* WARREN, 1902, Novit. zool., **9**: 508.

*Chloroclystis muscosa* (WARREN); PROUT, 1937, in: SEITZ, **16**: 111, pl. 12b.

Usa River, 3900 ft, 21. IV. 1965, 1 ♀. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂, 2 ♀.

**Distribution.** Ethiopia, Kenya, Tanzania.

### *Trimetopia aetheraria* GUENÉE

*Trimetopia aetheraria* GUENÉE, 1857, in: BOISDUVAL and GUENÉE, Hist. nat. Insectes, Spec. gén. Lépid., **9**: 352; 1858, ibid. Atlas: pl. 5, fig. 9.

*Trimetopia aetheraria* GUENÉE; JANSE, 1934, **2** (2): 127, text-fig. 41, pl. 2, fig. 24.

*Trimetopia aetheraria* GUENÉE; PROUT, 1935, in: SEITZ, **16**: 115, pl. 12e.

Usa River, 3900 ft, IX. 1965—II. 1966, 5 ♂, 1 ♀.

**Distribution.** Ethiopia, Kenya, Uganda, Rhodesia, Zaire, Cameroun, Angola.

### *Hydrelia meruana* AURIVILLIUS

*Hydrelia meruana* AURIVILLIUS, 1910, in: SJÖSTEDT, Wiss. Ergebn. schwed. zool. Expedn, Kilimandjaro Meru, 1905—1906, **9** (Lepid.): 42, pl. 2, fig. 25.

Usa River, 3900 ft, 20—30. IV. 1965, 3 ♀. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 7 ♂, 2 ♀; ibid., 6—12. V. 1965, 2 ♂, 3 ♀. W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1966, 5 ♂, 3 ♀.

**Distribution.** Tanzania, Mt Meru.

### *Asthenotricha strangulata* HERBULOT

*Asthenotricha strangulata* HERBULOT, 1953, Bull. Soc. Ent. Fr., **1953**: 11.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 5 ♀. W. slope of Mt Meru, Olkokola, 8700 ft, 16—21. VII. 1965, 5 ♂, 2 ♀; ibid., 6—27. XII. 1966, 8 ♂, 15 ♀.

**Distribution.** E. Zaire, Rwanda, Uganda, Kenya.

### *Asthenotricha unipecten* (PROUT)

*Hydrelia unipecten* PROUT, 1915, Novit. zool., **22**: 337; 1935, in: SEITZ, **16**: 116, pl. 12e.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 29 ♂, 8 ♀.

**Distribution.** Kenya, Uganda, Zaire. Represented in São Tomé Island by subsp. *tamsi* PROUT (1935).

### *Asthenotricha ansorgei* WARREN

*Asthenotricha ansorgei* WARREN, 1899, Novit. zool., **6**: 296.

Usa River, 3900 ft, 22. IV. 1965, 1 ♀.

**Distribution.** Uganda, Kenya.

### *Asthenotricha lophopterata anisobapta* PROUT

*Asthenotricha lophopterata anisobapta* PROUT, 1932, Mém. Soc. zool. Fr., **29**: 468.

*Asthenotricha lophopterata anisobapta* PROUT; FLETCHER, 1958, Ruwenzori Expedn. 1952, **1**: 123 (synonymy), fig. 39.

E. slope of Mt Meru, 5700 ft, 6. V. 1965, 1 ♂. W. slope of Mt Meru, Olkokola, 8700 ft, 16. VII. 1965, 1 ♂; ibid., 6—27. XII. 1965, 2 ♂.

**Distribution.** Ethiopia, Kenya, Uganda, Tanzania.

### *Asthenotricha serraticornis* WARREN

*Asthenotricha serraticornis* WARREN, 1902, Novit. zool., **9**: 505.

*Asthenotricha serraticornis* WARREN; PROUT, 1935, in: SEITZ, **16**: 118, pl. 12g.

Usa River, 3900 ft, 21. V. 1965, 1 ♂. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂, 1 ♀. W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965, 28 ♂, 29 ♀.

The specimen from Usa River and the pair from the eastern slope of Mt Meru have the forewing length of 12—13 mm in the male and 14 mm in the female; the series from the western slope of Mt Meru measure 14.5—16 mm in the male and 16—17 mm in the female.

**Distribution.** Kenya, Uganda, Malawi.



## ENNOMINAE

**Sicyodes warreni** PROUT

*Sicyodes warreni* PROUT, 1938, in: SEITZ, **16**: 138, pl. 13g.

E. slope of Mt Meru, 5700 ft, 8. V. 1965, 1 ♂.

Distribution. Kenya.

**Epigynopteryx ansorgei** (WARREN)

*Aeschropteryx ansorgei* WARREN, 1901, Novit. zool., **8**: 17.

*Aeschropteryx ansorgei* ab. *diffusa* WARREN, 1901, ibid., **8**: 215.

*Aeschropteryx ansorgei* ab. *subrufa* WARREN, 1901, ibid., **8**: 215.

*Aeschropteryx ansorgei* ab. *fulvitincta* WARREN, 1909, ibid., **16**: 120.

*Ourapteryx barbaria* OBERTHÜR, 1911, Études Lépid. comparée **5** (2): 31, pl. 87, fig. 848.

*Epigynopteryx ansorgei* ab. *pyrographa* DEBAUCHE, 1937, Ann. Mag. nat. Hist., (10) **20**: 343, pl. 7, fig. 1.

Usa River, 3900 ft, 21. IV.—20. 1965, 3 ♂, 1 ♀; ibid., IX. 1965—II. 1966, 2 ♂. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 6 ♂, 1 ♀.

Distribution. Equatorial Africa.

The series reflects the variation known to occur in the species; it includes four specimens of ab. *subrufa* WARREN and four specimens of ab. *pyrographa* DEBAUCHE; both aberrations are from each of the two localities listed.

**Epigynopteryx townsendi** FLETCHER

*Epigynopteryx townsendi* FLETCHER, 1958, Veröff. zool. StSamml. Münch., **5**: 134, pl. 1, figs. 4—7, pl. 4, figs. 23, 24.

Usa River, 3900 ft, 28. IV. 1965, 1 ♀; ibid., 29. VI.—20. VII. 1965, 2 ♂, 1 ♀; ibid., IX. 1965—II. 1966, 5 ♂, 3 ♀. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂, 2 ♀. Katesh, 5900 ft, 25—29. VI. 1965, 5 ♀.

Distribution. Kenya, Tanzania.

**Epigynopteryx** sp.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 2 ♂ (forewing length 15.5—16 mm); W. slope of Mt Meru, Olkokola, 8700 ft, 16. VII. 1965, 1 ♂; ibid., 6—27. XII. 1965, 2 ♂ (forewing length 17.5—18 mm).

Closely related to, possibly a subspecies of, *E. flavedinaria* (GUENÉE, 1857), differing in the male genitalia in the cornutus; in *flavedinaria* it is slender and finely tapered, equal in length to the width of the aedeagus; in the specimens recorded above it is shorter than the width of the aedeagus and broadly rounded at apex, with a minute, thorn-like tip.

**Epigynopteryx fimosa** (WARREN)

*Eurythecodes fimosa* WARREN, 1905, Novit. zool., **12**: 37.

Usa River, 3900 ft, 20. V. 1965, 1 ♀. E. slope of Mt Meru, 5700 ft, 8—13. V. 1965, 4 ♂; ibid., 21. I.—1. II. 1966, 1 ♀.

Distribution. W. Africa, Sierra Leone to Angola.

**Xenimpia misogyna** CARCASSON

*Xenimpia misogyna* CARCASSON, 1962, Jl. E. Afr. nat. Hist. Soc., **24** (1): 60, pl. 1, fig. 9, pl. 2, fig. 13.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 7 ♂.

Distribution. Kenya.



**Xenimpia maculosata (WARREN)**

*Procypha maculosata* WARREN, 1897, Novit. zool., **4**: 121.

*Procypha maculosata* WARREN; JANSE, 1932, **1**: 190, text-fig. 70, pl. 4, fig. 9.

E. slope Mt Meru, 5700 ft, 21. I.—1. II. 1966, 2 ♂.

Distribution. Kenya, S. Africa.

**Xenimpia erosa WARREN**

*Xenimpia erosa* WARREN, 1895, Novit. zool., **2**: 135.

*Hyposidra linearis* WARREN, 1897, ibid., **4**: 257.

*Xenimpia erosa* WARREN; JANSE, 1932, **1**: 187, text-fig. 67, pl. 4, figs. 5, 6.

Usa River, 3900 ft, IX. 1965—II. 1966, 10 ♂. E. slope Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂.

Distribution. Sierra Leone, Ghana, Angola, Zaire, Kenya southwards to Cape Province.

**Coenina aurivena BUTLER**

*Coenina aurivena* BUTLER, 1898, Proc. zool. Soc. Lond., **1898**: 433.

*Coenina cervina* WARREN, 1899, Novit. zool., **6**: 63.

*Coenina aurivena* BUTLER; CARPENTER, 1926, Proc. ent. Soc. Lond., **1925**: LVII, fig.

Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♀.

Distribution. Ghana, Zaire, Uganda, Kenya, Tanzania.

**Euexia percnopus PROUT**

*Euexia percnopus* PROUT, 1915, Novit. zool., **22**: 379.

*Euexia percnopus aora* PROUT, 1922; ibid., **29**: 356.

*Euexia percnopus* PROUT; JANSE, 1932, **1**: 183, text-fig. 64, pl. 3, fig. 23, pl. 4, fig. 2.

Usa River, 3900 ft, IX. 1965—II. 1966, 2 ♂.

Distribution. South-eastern Zaire (Katanga), Tanzania to S. Africa.

**Hypochrosis chiarinii (OBERTHÜR)**

*Aspilates chiarinii* OBERTHÜR, 1883, Annali Mus. civ. Stor. nat. Giacomo Doria, **18**: 739, pl. 9, fig. 9.

E. slope Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂. Katesh, 5900 ft, 26—28. VI. 1965, 1 ♂, 1 ♀.

Distribution. Ethiopia, S. E. Zaire (Katanga), Kenya, Tanzania, Rhodesia, Mozambique (Gazaland), Angola, Cameroun.

**Psilocerea pulverosa (WARREN)**

*Eupsamma pulverosa* WARREN, 1894, Novit. zool., **1**: 461.

*Psilocerea pulverosa* (WARREN); JANSE, 1932, **1**: 192, text-fig. 71, pl. 4, fig. 11.

*Psilocerea pulverosa* (WARREN); FLETCHER, 1958, Veröff. zool. StSamml. Münch., **5**: 135 (synonymy, distribution).

Usa River, 3900 ft, 29. IV. 1965, 1 ♂; ibid., IX. 1965—II. 1966, 1 ♂. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 4 ♂.

Distribution. Angola, Zaire, Uganda, Ethiopia to Cape Province.

**Psilocerea laevigata FLETCHER**

*Psilocerea laevigata* FLETCHER, 1958, Veröff. zool. StSamml. Münch., **5**: 135, pl. 2, fig. 12, pl. 3, figs. 20—22.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 3 ♂.

Distribution. Cameroun, Zaire, Uganda, Tanzania.

**Psilocerea semifacta** PROUT

*Psilocerea semifacta* PROUT, 1926, Ark. Zool., **18** (A 25): 16.

W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965, 1 ♂.

Distribution. Kivu, Uganda, Kenya.

**Psilocerea leptosyne** sp. n.

(Pl. 2, fig. 20; Pl. 10, figs. 86—88)

♂. Vestiture and wings light buff to light yellow, sparsely irrorate with greyish brown. Antemedial fascia on forewing and postmedial fascia on each wing a darker shade of ground colour, but marked as brown spots on veins; subterminal fascia on each wing represented by diffuse fuscous spots between veins, between  $M_3$  and  $Cu\ 1a$  on forewing and between vein  $M_3$  and anal angle on hindwing.

♀. Vestiture and wings buff to butter yellow, more densely irrorate with greyish brown than the male, especially distad of the antemedial and proximad of the postmedial fascia on the forewing; transverse fasciae light brown, slenderly but sharply marked. In some examples the whole forewing and the hindwings posteriorly are densely and evenly irrorate with greyish brown and the transverse fasciae sharply edged with light buff, the antemedial proximally, the postmedial distally. Discal spots minute, fuscous, sometimes wanting.

Forewing length. ♂♀ 21—24 mm.

♂ genitalia (Pl. 10, figs. 86, 87). Tegumen slenderly produced anteriorly; distance beyond base of valves equal to length of uncus. Vesica with cluster of spines, coronet-like, at apex; one straight, tapered cornutus, one-half as long as aedeagus and one, two, or three additional cornuti, one-third as long as aedeagus. ♀ genitalia (Pl. 10, fig. 88).

Closely similar in colour and pattern to *P. pulverosa* (WARREN, 1894) and to *P. cneca* PROUT, 1932. Most surely distinguished by genitalia; in the male the long, slender tegumen and the ornamentation of the vesica and in the female the form and pattern of sclerotization of the corpus bursae are diagnostic.

Holotype ♂, Kenya (B. E. Africa): Nairobi, 26. V. 1911 (T. J. ANDERSON), Geometridae genitalia slide no. 1826, in BMNH. — Paratypes, Kenya: Nairobi, V. 1906 (JACKSON), 1 ♂ Nairobi, 5000 ft, IV—VII., XI. (VAN SOMEREN), 2 ♂, 7 ♀; Nairobi, IV, V, IX, XII (D. M. HOPKINS), 6 ♀; Nairobi, VII—VIII. 1958 (A. L. ARCHER), 1 ♂; Nairobi, Thika Rd, VI. 1950 (E. PINHEY), 1 ♀; Nairobi, Mt Kenya, 1 ♂; Ngong, Nairobi, V. 1956 (R. COULSON), 1 ♀; Lumbwa, 19. I. 1922 (G. W. JEFFERY), 1 ♂; Nakuru, bred. VI. 1937 (A. L. H. TOWNSEND), 1 ♀, all in BMNH. — Tanzania: Usa River, 3900 ft, IX. 1965—II. 1966 (DR. J. SZUNYOGHY), 4 ♂; E. slope of Mt. Meru, 5700 ft, 21. I.—1. II. 1966 (DR. J. SZUNYOGHY), 3 ♂, 4 ♀, all in Hungarian Natural History Museum.

The following examples are associated with *P. leptosyne* but excluded from the type series.

Zaire (Katanga), Elisabethville, V—VI. (CH. SEYDEL), 2 ♂, in BMNH, 2 ♂ in Museum Royal de l'Afrique Centrale; Shinkolobwe, 9. II. 1931, 1 ♀. — Zambia: Abercorn, 20. V. 1917 (T. A. BARNS), 1 ♂. — Malawi: Mt Mlanje, 28. V. 1913 (S. A. NEAVE), 1 ♂.



***Psilocerea szunyoghyi* sp. n.**

(Pl. 2, figs. 21, 22; Pl. 10, figs. 89—91)

♀. Vestiture light buff mixed with tawny to greyish orange (Pl. 5, B4). Wings light buff to golden, light brown or greyish orange varyingly speckled with grey and fuscous black; antemedial fascia very weakly marked, more commonly wanting; postmedial fascia on each wing tawny to light brown proximally, light yellow to light buff distally; that on forewing sharply defined, acutely angled on vein  $R_5$ , thence brown to costa; discal spots grey; cilia uniformly light brown.

♀. Patagia and tegulae yellow to orange, varyingly mixed with grey or brown; remainder of vestiture light buff suffused with grey and lightly irrorate with fuscous. Wings yellowish orange varyingly irrorate with grey, often densely in medial area of forewing; veins marked reddish orange; transverse fascia grey; antemedial on forewing edged proximally, postmedial on each wing edged distally with reddish orange, all sharply marked; subterminal fascia ill-defined and diffuse, represented by grey shading, but often forming a large spot between veins  $M_5$  and  $Cu\ 1a$  on forewing; discal spots dark grey cilia light brown distally, light buff proximally.

Forewing length. ♂ 22—24 mm; ♀ 22—26 mm.

♂ genitalia (Pl. 10, figs. 90, 91), ♀ genitalia (Pl. 10, fig. 89).

Similar in forewing pattern and related closely to *P. coronata* FLETCHER (1958), known only from a male from Mt Elgon. The male is distinguished externally by the shorter antennal pectinations ( $7\times$  diameter of shaft in *szunyoghyi*,  $10\times$  diameter of shaft in *coronata*) and by the hindwing being concolorous with the forewing; distinguished structurally by the presence of only three instead of seven short cornuti at the apex of the vesica.

Holotype 6, Tanzania: W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965 (Dr. J. SZUNYOGHY). — Paratypes, Tanzania: holotype data, 24 ♂, 56 ♀; E. Meru, 7—8000 ft, I. 1938 (B. COOPER), 1 ♀ in BMNH.

It is with pleasure that I name this fine, distinctively patterned species in honour of the late Dr. J. SZUNYOGHY, who evidently collected not only with great energy, but with very great care.

***Xanthisthisa tarsispina* (WARREN)**

*Acanthoscelis tarsispina* WARREN, 1901, Novit. zool., **8**: 215.

*Xanthisthisa tarsispina* (WARREN); FLETCHER, 1958, Veröff. zool. StSamml. Münch., **5**: 136.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 4 ♂; *ibid.*, 8. V. 1965, 1 ♂.

Distribution. Kenya, Uganda, Tanzania, Malawi.

The synonymy suggested by FLETCHER (1958) is still tentative and awaits further material, preferably reared.

***Xanthisthisa niveifrons* (PROUT) comb. n.**

*Eurythecodes niveifrons* PROUT, 1922, Ann. Transv. Mus., **8**: 176, pl. 1, fig. 16.

*Eurythecodes niveifrons* PROUT; JANSE, 1932, **1**: 182, text-fig. 63, pl. 4, fig. 1.



E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 2 ♂; *ibid.*, 8. V. 1965, 1 ♂.

**Distribution.** Transvaal, Kenya.

The male genitalia show a close affinity with those of *Acanthoscelis tarsispina* WARREN (1901), the type-species of *Xanthisthisa* SPEISER, 1902 and *niveifrons* is on those grounds transferred to that genus from *Eurythecodes* WARREN (1897).

**Mesocoela obscura** WARREN

(Pl. 3, figs. 23, 24)

*Mesocoela obscura* WARREN, 1902, Novit. zool., **9**: 531.

*Mesocoela swinhoei* BASTELBERGER, 1907, Dt. ent. Z. Iris, **20**: 266. **Syn. n.**

Usa River, 3900 ft, IX. 1965—II. 1966, 15 ♂.

**Distribution.** Kenya, Tanzania, Malawi.

Previously known only from the unique female types of *M. obscura* WARREN and *M. swinhoei* BASTELBERGER; a short series of six males and three females, collected by G. PRINGLE at Amani in Tanzania, has proved the species to be markedly sexually dimorphic in wing-shape. A male and a female are illustrated for the first time on plate 3.

**Odontopera ochroneura dicyrta** (PROUT)

*Gonodontis ochroneura dicyrta* PROUT, 1938, in: SEITZ, **16**: 144, pl. 15d.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂, 1 ♀; *ibid.*, 12. V. 1965, 1 ♂.

**Distribution.** Kenya, Mau Escarpment. Represented by subsp. *aidna* PROUT (1938) in Uganda and by the nominate subspecies, *o. ochroneura* PROUT (1938) in Kivu.

**Odontopera aemoniaria eupages** (PROUT)

*Gonodontis eupages* PROUT, 1938, in: SEITZ, **16**: 144, pl. 15e.

*Gonodontis aemoniaria eupages* PROUT; FLETCHER, 1958, Ruwenzori Expedn 1952, **1** (6): 129.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂.

**Distribution.** Zaire, Kivu, Uganda. Represented by *a. aemoniaria* SWINHÖE (1904) in Kenya.

**Erastria madecassaria** (BOISDUVAL)

*Geometra madecassaria* BOISDUVAL, 1833, Nouv. Ann. Mus. Hist. nat. Paris, **2**: 262.

*Syrphodia madecassaria* (BOISDUVAL); PROUT, 1932, Mém. Soc. zool. Fr., **29**: 497 (full synonymy).

*Petrodava madecassaria* (BOISDUVAL); JANSE, 1932, **1**: 199, text-fig. 74, pl. 4, fig. 17.

Lake Manyara, 3150 ft, 28. V. 1965, 1 ♀. Usa River, 3900 ft, 20. V. 1965, 1 ♀; *ibid.*, IX. 1965—II. 1966, 1 ♂, 3 ♀. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 3 ♂, 5 ♀; *ibid.*, 8. V. 1965, 4 ♂. Katesh, 5900 ft, 30. VI. 1965, 1 ♀.

**Distribution.** Africa, south of the Sahara, Madagascar.

**Tephрина catalaunaria** (GUENÉE)

*Psamatodes catalaunaria* GUENÉE, 1857, in: BOISDUVAL and GUENÉE, Hist. nat. Insectes, Spec. gén. Lépid., **10**: 108.

*Tephрина dataria* WALKER, 1861, List Specimens lepid. Insects Colln Br. Mus., **23**: 961.

*Tephрина defectaria* WALKER, 1861, *ibid.*, **23**: 962.

*Aspilates occupata* WALKER, 1862, *ibid.*, **24**: 1071.

*Aspilates proxantharia* WALKER, (1863) 1862, *ibid.*, **26**: 1679.

*Panagra cogitata* WALKER, (1863) 1862, *ibid.*, **26**: 1661.

*Semiothisa largificaria* MÖSCHLER, 1887, Abh. senck. naturf. Ges., **15** (1): 95, fig. 20.

*Tephрина catalaunaria* (GUENÉE); JANSE, 1932, **1**: 238, text-figs. 89, 91, pl. 7, fig. 3.

Lake Manyara, 3150 ft, 1. VI. 1966, 1 ♂. Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♀.

**Distribution.** S. Europe; Africa, south of the Sahara, Mascarene region. Represented in the Oriental region by *Tephрина falsaria* [WALKER, (1863)].

**Tephрина quadriplaga** ROTHSCHILD

*Tephрина quadriplaga* ROTHSCHILD, 1921, Novit. zool., **28**: 217.

*Tephрина disputaria pallidaria* LE CERF, 1924, Annls. Soc. ent. Fr., **93**: 209, pl. 1, figs. 5, 6.

**Syn. n.**

*Tephрина pallidaria* LE CERF; PROUT, 1931, Ann. Mag. nat. Hist., (10) **7**: 272.

Lake Sereri, 3150 ft, 15. VIII—23. IX. 1965, 3 ♂, 3 ♀. Lake Manyara, 3150 ft, 27. V—22. VI. 1965, 2 ♂, 2 ♀. Katesh, 5900 ft, 29—30. VI. 1965, 2 ♂, 1 ♀.

*Distribution.* Aden, Eritrea, Somalia, Ethiopia, Sudan, Niger, Kenya, Tanzania.

***Tephрина pulinda deerraria* WALKER**

*Tephрина deerraria* WALKER, 1861, List Specimens lepid. Insects Colln Br. Mus., **23**: 962.

*Tephрина deerraria* WALKER ab. *dissocia* WARREN, 1897, Novit. zool., **4**: 112.

*Tephрина deerraria* WALKER; JANSE, 1932, **1**: 239, text-figs. 89, 91, pl. 6, fig. 27.

*Tephрина pulinda deerraria* WALKER; WILTSHIRE, 1952, Bull. Soc. Fouad 1<sup>er</sup> Entom., **36**: 172, figs. 5a—d.

Lake Manyara, 3150 ft, 27. V.—18. VI. 1965, 2 ♂, 5 ♀. Usa River, 3900 ft, 17. IV.—27. V. 1965, 1 ♂, 5 ♀; *ibid.*, IX. 1965—II. 1966, 5 ♂, 1 ♀.

*Distribution.* Aden, Africa south of the Sahara, Madagascar. Represented by the nominate subspecies, *p. pulinda* (WALKER, 1860) in Ceylon, India and Burma.

***Tephрина presbitaria* SWINHOE**

*Tephрина presbitaria* SWINHOE, 1904, Trans. ent. Soc. Lond., **1904**: 511.

Lake Sereri, 3150 ft, 17—21. VIII. 1965, 3 ♀. Usa River, 3900 ft, 30. IV. 1965, 1 ♀. Katesh, 5900 ft, 25. VI. 1965, 1 ♂, 1 ♀.

*Distribution.* Ethiopia, Uganda, Kenya.

***Tephрина arizela* sp. n.**

(Pl. 2, figs. 15, 16; Pl. 10, figs. 92—95)

♂. Hind tibia without hair-pencil. Frons and collar light brown. Thorax light grey, patagia light brown in basal half. Abdomen white irrorate with fuscous. Wings: upperside white irrorate and patterned with dark brown, as illustrated; underside white, suffused with buffy brown along costa and veins on each wing, coarsely irrorate and patterned with dark brown, as illustrated.

The female differs in being less sharply marked on the upperside, the antemedial and postmedial fasciae being diffuse.

Forewing length. ♂ 14.5—15.5 mm; ♀ 14 mm.

♂ genitalia (Pl. 10, figs. 92, 93), ♀ genitalia (Pl. 10, figs. 94, 95).

Closely related to *Tephрина pulinda deerraria* WALKER (1861). Distinguished externally in the male by the sharply marked, well contrasted ground colour and pattern and structurally by the well-developed lateral lobes at the base of the uncus, the long, broadly rounded vinculum, the form of the two tapered cornuti on the vesica and by the form of the eighth sternite. The female is best distinguished from the polymorphic *deerraria* by the genitalia, in which the posterior margin of the operculum is evenly rounded and the posterior half of the corpus bursae is evenly and very weakly sclerotized and lightly ribbed longitudinally.

Holotype ♂, (Kenya) Brit. E. Africa: S. Kavirondo, Kuja Valley, 4000 ft, 1. V. 1911 (S. A. NEAVE), Geometridae genitalia slide no. 9646, in BMNH. — Paratypes, Kenya, holotype data, Geometridae genitalia slide no. 9647, in BMNH. Tanzania: Usa River, 3900 ft, 30. IV.—3. V. 1965 (DR. J. SZUNYOGHY), 3 ♂ in Hungarian Natural History Museum.



***Tephрина inconspicuaria* (HÜBNER)**

*Geometra inconspicuaria* HÜBNER, (1818)—(1819) 1796, Samml. eur. Schmett., **5**: pl. 97, fig. 500.

*Eubolia pumicaria* LEDERER, 1855, Verh. zool.-bot. Ver. Wien, **5**: 213, pl. 3, fig. 6.

*Selidosema osyriaria* GUENÉE, 1857, in: BOISDUVAL and GUENÉE, Hist. nat. Insectes, Spec. gén. Lépid., **10**: 148.

*Acidalia cinerascens* BUTLER, 1875, Ann. Mag. nat. Hist., (4) **16**: 418.

*Tephрина cinerascens* (BUTLER); JANSE, 1932, **1**: 241, text-figs. 89, 91, pl. 7, fig. 9.

Lake Manyara, 3150 ft, 28. V.—22. VI. 1965, 1 ♂, 4 ♀. Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♂.

Distribution. Mediterranean coastal areas eastwards to Baluchistan; Africa.

***Tephрина bilineata* (WARREN)**

*Ematurga bilineata* WARREN, 1895, Novit. zool., **2**: 129.

*Tephрина antennata* WARREN, 1897, Novit. zool., **4**: 399. Syn. n.

*Tephрина antennata* WARREN; JANSE, 1932, **1**: 241, text-fig. 91, pl. 7, fig. 8.

Usa River, 3900 ft, 16. V. 1965, 1 ♂, 1 ♀.

Distribution. East Africa, Kenya to Cape Province.

***Semiothisa normata* (WALKER)**

*Tephрина normata* WALKER, 1861, List Specimens lepid. Insects Colln Br. Mus., **23**: 966.

*Semiothisa normata* (WALKER); JANSE, 1932, **1**: 212, text-fig. 79, pl. 5, fig. 13.

*Semiothisa normata* (WALKER); FLETCHER, 1958, Ruwenzori Expedn 1952, **1** (6): 130 (synonymy).

Usa River, 3900 ft, 22. V. 1965, 1 ♀. E. slope of Mt Meru, 5700 ft, 8. V. 1965, 1 ♂. Katesh, 5900 ft, 28. VI. 1965, 1 ♂.

Distribution. Africa, south of the Sahara; Madagascar, India to Australia.

***Semiothisa subcurvaria* (MABILLE)**

*Tephрина subcurvaria* MABILLE, 1897, Annls Soc. ent. Fr., **66**: 228.

*Discalma subcurvaria araps* PROUT, 1926, Novit. zool., **33**: 187.

*Semiothisa subcurvaria* (MABILLE); JANSE, 1932, **1**: 209, text-fig. 79, pl. 5, fig. 9.

Lake Sereri, 3150 ft, 14—24. VIII. 1965, 1 ♂, 3 ♀. Usa River, 3900 ft, 24. IV.—16. V. 1965, 2 ♂, 5 ♀; ibid., IX. 1965—II. 1966, 1 ♀. Katesh, 5900 ft, 25. VI. 1965, 1 ♂.

Distribution. Arabia, East Africa, Ethiopia to Cape Province, N. Zaire.

***Semiothisa warreni* (PROUT)**

*Osteodes warreni* PROUT, 1915, Novit. zool., **22**: 349.

Lake Sereri, 3150 ft, 17. VIII. 1956, 1 ♂. Usa River, 3900 ft, 10—27. V. 1965, 2 ♂, 3 ♀; ibid., 19. VII. 1965, 1 ♂; IX. 1965—II. 1966, 2 ♂, 1 ♀.

Distribution. Kenya.

***Semiothisa turbulentata* (ZELLER MS) (GUENÉE)**

*Osteodes turbulentata* (ZELLER MS) GUENÉE, 1857, in: BOISDUVAL and GUENÉE, Hist. nat. Insectes, Spec. gén. Lépid., **10**: 177.

*Aspilates exumbrata* WALKER, (1863) 1862, List Specimens lepid. Insects Colln Br. Mus., **26**: 1680.

*Osteodes turbulentata* GUENÉE; FELDER, 1875, in: FELDER and ROGENHOFFER, Reise öst. Freigatte Novara (Zool.), **2** (Abt. 2): pl. 129, figs. 4, 4a.

*Osteodes procidata eritreensis* PROUT, 1915, Novit. zool., **22**: 348. Syn. n.

*Semiothisa procidata* GUENÉE sensu JANSE, 1932, **1**: 220, text-fig. 85, pl. 5, figs. 28, 29.

Usa River, 3900 ft, IX. 1965—II. 1966, 2 ♀. Katesh, 5900 ft, 25—30. VI. 1965, 3 ♂, 5 ♀.

Distribution. Arabia, Ethiopia to S. and S. W. Africa.

Considerable confusion concerning the identity of *Tephрина procidata* (GUENÉE) and *T. turbulentata* (GUENÉE) exists in the literature and in collections. Through the courtesy of DR. P. VIETTE of the Museum National d'Histoire.



Naturelle in Paris I have been able to examine the type of *procidata*. According to FELDER (1875), the type of *turbulentata* should be in the Naturhistorisches Museum in Vienna, but DR. KASY has been unable to find it. Fortunately FELDER's illustration of the type leaves its identity in no doubt.

Both species are similarly distributed, occurring in Arabia and in East Africa from Ethiopia to Cape Province. In *turbulentata* the proximal margin of the dark brown terminal fourth of the forewing is usually straight, at right-angles to the posterior margin and sharply defined. In the South African population of *procidata*, *T. procidata semispurcata* WALKER, the terminal fourth is usually strongly marked with dark brown, but its proximal margin is diffuse and ill-defined; in the nominotypical, central-east and north-east African populations the terminal fourth is little darker than the remainder of the wing.

In the male genitalia of *turbulentata* (Pl. 11, figs. 100, 101, 103), the valve is deeply excavate between the slender dorsal arm and the tapered ventral lobe which is tapered apicad, sclerotized and minutely scobinate; there is a short scobinate ridge at the deepest part of the excavation. The eighth sternum is deeply excavate posteriorly, the excavation is longer than broad, narrowed anteriorly and rounded in key-hole form.

In *procidata* (Pl. 11, figs. 96—98) the excavation between the dorsal arm and the ventral lobe is broad and shallow, the ventral lobe is smoothly rounded apicad with a fine, slender ridge parallel to the exterior margin. The eighth sternum is shallowly and evenly excavate posteriorly, broader than deep.

In the female genitalia of *turbulentata* (Pl. 11, fig. 102) the ostial plate is strongly sclerotized with a pair of ear-like, lateral processes, the whole just subequal in width to the greatest width of the corpus bursae; the signum is one-fourth as wide as the corpus bursae.

In the female genitalia of *procidata* (Pl. 11, fig. 99) the ostial plate is weakly sclerotized and one-third as broad as, and the strongly stellate signum is two-thirds as broad as the greatest width of the corpus bursae.

#### *Semiothisa brongusaria* (WALKER)

*Epione brongusaria* WALKER, 1860, List Specimens lepid. Insects Colln Br. Mus., **20**: 123.

*Tephрина incessaria* WALKER, 1861, *ibid.*, **23**: 962.

*Phasiane miliaria* FELDER, 1875, in: FELDER and ROGENHOFER, Reise öst. Fregatte Novara (Zool.), **1** (Abt. 2): pl. 129, fig. 6.

*Tephriopsis sabulifera* WARREN, 1899, Novit. zool., **6**: 310.

*Tephрина oleochroa* HAMPSON, 1909, Trans. ent. Soc. Lond., **19**: 122, pl. 4, fig. 49.

*Semiothisa brongusaria* (WALKER); JANSE, 1932, **1**: 228, text-figs. 78, 81, pl. 6, fig. 11.

Lake Sereri, 3150 ft, 24. IX. 1965, 1 ♂. Usa River, 3900 ft, 30. V. 1965, 1 ♀; *ibid.*, 4. VIII. 1965, 1 ♀. Katesh, 5900 ft, 26—30. VI. 1965, 6 ♂, 35 ♀.

Distribution. Ethiopia, Uganda, Kenya to Cape Province.

**Semiothisa maculosa (WARREN)**

*Gonodela maculosa* WARREN, 1899, Novit. zool., **6**: 306.

*Semiothisa tataria* SWINHOE, 1904, Trans. ent. Soc. Lond., **1904**: 508.

*Macaria maculosa ammodes* PROUT, 1922, Ann. Transv. Mus., **8**: 175.

*Semiothisa maculosa ammodes* (PROUT); JANSE, 1932, **1**: 218, pl. 5, fig. 22.

Lake Manyara, 3150 ft, 19. VI. 1965, 1 ♂. Lake Sereri, 3150 ft, 22. VII. 1965, 1 ♀; *ibid.*, 23—25. IX. 1965, 2 ♀.

Distribution. Uganda, Ethiopia to Tanzania, Angola. Represented in Zambia, Malawi and Mozambique by subsp. *ammodes* PROUT.

**Semiothisa streniata (GUENÉE)**

*Macaria streniata* GUENÉE, 1857, in: BOISDUVAL and GUENÉE, Hist. nat. Insectes, Spec. gén. Lépid., **10**: 87.

*Semiothisa streniata* (GUENÉE); JANSE, 1932, **1**: 229, text-fig. 84, pl. 6, figs. 13, 14.

*Semiothisa streniata* (GUENÉE); FLETCHER, 1958, Veröff. zool. StSamml. Münch., **5**: 136 (synonymy, distribution.)

Usa River, 3900 ft, 25—26. IV. 1965, 1 ♂, 1 ♀; *ibid.*, IX. 1965—II. 1966, 5 ♂, 1 ♀.

**Semiothisa deuteria PROUT**

*Semiothisa deuteria* PROUT, 1932, Mém. Soc. zool. Fr., **29**: 487.

Usa River, 3900 ft, 20. V.—10. VI. 1965, 2 ♂, 3 ♀.

Distribution. Ethiopia, Kenya.

**Semiothisa duplicilinea (WARREN)**

*Gonodela duplicilinea* WARREN, 1897, Novit. zool., **4**: 107.

*Semiothisa duplicilinea* (WARREN); JANSE, 1932, **1**: 211, text-fig. 88, pl. 6, fig. 24.

Katesh, 5900 ft, 28. VI. 1965, 1 ♀.

Distribution. Kenya, Natal.

**Semiothisa umbrata (WARREN)**

*Gubaria umbrata* WARREN, 1897, Novit. zool., **4**: 109.

*Semiothisa sherrata* SWINHOE, 1904, Trans. ent. Soc. Lond., **1904**: 505.

*Semiothisa umbrata* (WARREN); JANSE, 1932, **1**: 217, text-fig. 84, pl. 5, fig. 20.

Katesh, 5900 ft, 28. VI. 1965, 1 ♀.

Distribution. Cameroun, Angola, Zaire, Uganda, Kenya, Transvaal, Natal. Represented in Madagascar by subsp. *juvenilis* HERBULOT, 1965.

**Semiothisa geminilinea PROUT**

*Semiothisa geminilinea* PROUT, 1929, Mém. Soc. zool. Fr., **29**: 489.

Usa River, 3900 ft, 22. IV.—1. VI. 1965, 12 ♂, 5 ♀; *ibid.*, IX. 1965—II. 1966, 5 ♂, 2 ♀.

Katesh, 5900 ft, 28—30. VI. 1965, 2 ♂, 2 ♀.

Distribution. Uganda, Kenya, Tanzania.

**Semiothisa contaminata (WARREN)**

*Gubaria contaminata* WARREN, 1902, Novit. zool., **9**: 528.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 3 ♂, 6 ♀.

Distribution. Kenya, Tanzania, Malawi.

**Semiothisa fuscataria MÖSCHLER**

*Semiothisa fuscataria* MÖSCHLER, 1887, Abh. senckenb. naturf. Ges., **15**: 94.

*Gonodela commixta* WARREN, 1897, Novit. zool., **4**: 106.

Usa River, 3900 ft, IX. 1965—II. 1966, 2 ♂, 1 ♀.

Distribution. W. Africa, Sierra Leone to Angola, Zaire, Uganda, Kenya.



**Semiothisa feraliata (GUENÉE)**

*Macaria feraliata* GUENÉE, 1857, in: BOISDUVAL and GUENÉE, Hist. nat. Insectes, Spec. gén. Lépid., **10**: 88.

*Macaria feraliata* GUENÉE; OBERTHÜR, 1923, Études Lépid. comparée, **20**: 245, pl. 555, fig. 4751.

Usa River, 3900 ft, 15. V. 1965, 1 ♂; *ibid.*, 12. VII. 1965, 1 ♂.

Distribution. W. Africa, Ivory Coast to Cameroun, Zaire, Zambia, Tanzania, Kenya.

**Semiothisa trirecurva sororcula (WARREN)**

*Azata sororcula* WARREN, 1897, Novit. zool., **4**: 105.

*Macaria hypoleuca* PROUT, 1916, Ann. Transv. Mus., **5**: 174, pl. 25, fig. 32.

*Semiothisa hypoleuca* (PROUT); JANSE, 1932, **1**: 231, text-fig. 87, pl. 6, fig. 17.

Usa River, 3900 ft, 22. IV. 1965, 1 ♀.

Distribution. W. Africa, Ghana to Angola, Zaire, E. Africa, Kenya to Cape Province. Represented in W. Uganda by *S. trirecurva confusata* WARREN (1899) and in Madagascar by *S. t. trirecurva* (SAALMÜLLER, 1891).

**Semiothisa separata (WARREN)**

*Azata separata* WARREN, 1899, Novit. zool., **6**: 59.

*Gonodela rectilinea* WARREN, 1905, *ibid.*, **12**: 403.

Usa River, 3900 ft, 18. V. 1965, 1 ♀. Katesh, 5900 ft, 29. VI. 1965, 1 ♂, 1 ♀.

Distribution. Equatorial Africa, Madagascar.

**Semiothisa unicolor (WARREN)**

*Gonodela unicolor* WARREN, 1905, Novit. zool., **12**: 403.

Katesh, 5900 ft, 27—29. VI. 1965, 3 ♂.

Distribution. Kenya, Natal.

**Semiothisa parallacta WARREN**

*Semiothisa parallacta* WARREN, 1897, Novit. zool., **4**: 112.

*Gonodela apicepallens* WARREN, 1905, Novit. zool., **12**: 401.

*Semiothisa parallacta* WARREN; JANSE, 1932, **1**: 221, text-fig. 78, pl. 6, fig. 1.

Usa River, 3900 ft, 21. IV. 1965, 1 ♂; *ibid.*, 15. VII. 1965, 1 ♀; IX. 1965—II. 1966, 1 ♂, 1 ♀.

Distribution. Equatorial Africa.

**Semiothisa semialbida (PROUT)**

*Macaria semialbida* PROUT, 1915, Novit. zool., **22**: 351.

Usa River, 3900 ft, 1965, 1 ♀.

Distribution. Ethiopia, Kenya.

**Semiothisa simplicilinea (WARREN)**

*Acadra simplicilinea* WARREN, 1905, Novit. zool., **12**: 401.

*Semiothisa simplicilinea* (WARREN); JANSE, 1932, **1**: 223, text-fig. 84, pl. 6, fig. 5.

E. slope of Mt Meru, 5700 ft, 21. IX.—1. II. 1966, 1 ♂.

Distribution. Uganda, Tanzania southwards to Cape Province.

**Semiothisa inconspicua (WARREN)**

*Tephрина inconspicua* WARREN, 1897, Novit. zool., **4**: 113.

*Semiothisa inconspicua* (WARREN); JANSE, 1932, **1**: 220, text-fig. 83, pl. 5, fig. 27.

Lake Manyara, 3150 ft, 27. V. 1965, 1 ♀. Usa River, 3900 ft, IV.—VII. 1965, 1 ♂, 5 ♀. Katesh, 5900 ft, 22—30. VI. 1965, 4 ♂, 6 ♀.

Distribution. Ethiopia to Natal. The Kenyan and Tanzanian populations have been named subsp. *pertaesa* PROUT (1932).



**Semiothisa arhoparia SWINHOE**

*Semiothisa arhoparia* SWINHOE, 1904, Trans. ent. Soc. Lond., **1904**: 509.

*Peridela butaria* SWINHOE ab. *spilota* WARREN, 1905, Novit. zool., **12**: 405.

*Peridela novaria* FAWCETT, 1916, Proc. zool. Soc. Lond., **1916**: 727, pl. 1, fig. 17

*Peridela berengaria* FAWCETT, 1916, *ibid.*, **1916**: 727, pl. 1, fig. 26.

Usa River, 3900 ft, 6. VIII. 1965, 1 ♀.

Distribution. Kenya.

**Semiothisa butaria SWINHOE**

*Semiothisa butaria* SWINHOE, 1904, Trans. ent. Soc. Lond., **1904**: 510.

Lake Manyara, 3150 ft, 21—22. VI. 1965, 2 ♀. Usa River, 3900 ft, 19. IV. 1965, 1 ♂; *ibid.*, 23. V. 1965, 1 ♀. Rungwa, 4250 ft, 21. X. 1965, 2 ♀. Katesh, 5900 ft, 27—28. VI. 1965, 2 ♀.

Distribution. East Africa, Ethiopia to Tanzania.

**Hyostomodes zelota PROUT**

*Hyostomodes zelota* PROUT, 1922, Novit. zool., **29**: 360.

Usa River, 3900 ft, 18. V. 1965, 1 ♂.

Distribution. Kenya.

**Colocleora divisaria (WALKER)**

*Boarmia divisaria* WALKER, 1860, List Specimens lepid. Insects Colln Br. Mus., **21**: 366.

*Racotis divisaria* (WALKER); JANSE, 1932, **1**: 264, text-fig. 98, pl. 8, fig. 10 (synonymy).

*Colocleora divisaria* (WALKER); PROUT, 1938, in: SEITZ, **16**: 157, pl. 16e.

Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♂.

Distribution. Equatorial Africa. Represented in Angola by subsp. *chresima* PROUT, 1938.

**Colocleora simulatrix (WARREN)**

*Alcis simulatrix* WARREN, 1899, Novit. zool., **6**: 305.

*Alcis remotata* WARREN, 1901, *ibid.*, **8**: 16.

*Hemerophila ochriplaga* PROUT, 1916, *ibid.*, **23**: 282.

*Colocleora simulatrix* (WARREN); PROUT, 1938, in: SEITZ, **16**: 158, pl. 16f.

Usa River, 3900 ft, 28—29. IV. 1965, 1 ♂, 1 ♀; *ibid.*, IX. 1965—II. 1966, 2 ♂. E. slope of Mt. Meru, 5700 ft, 21. IX.—1. II. 1966, 3 ♂.

Distribution. Sierra Leone, Cameroun, Zaire, Chad, Uganda, Kenya, Zambia. Closely similar in habitus to subsp. *crenifera* PROUT (1938) described from Mt. Elgon.

**Aphilopota foedata (BASTELBERGER)**

*Dyscia foedata* BASTELBERGER, 1907, Int. ent. Z., **1**: 119.

Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♂, 1 ♀. E. slope of Mt. Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂.

Distribution. Tanzania.

**Menophra dnophera leptophema (PROUT)**

*Hemerophila leptophema* PROUT, 1954, Entomologist, **87**: 188, 1938; in: SEITZ, **16**: pl. 17d.

E. slope of Mt. Meru, 5700 ft, 21. I.—1. II. 1965, 15 ♂.

Distribution. Angola. Represented in Guinea and Cameroun by *d. dnophera* (PROUT, 1915) and in Kivu and Uganda by *dnophera plagifera* (PROUT, 1954).

**Xylopteryx versicolor (WARREN)**

*Scotopteryx versicolor* WARREN, 1902, Novit. zool., **9**: 526.

*Scotopteryx versicolor* ab. *albimedia* WARREN, 1902, *ibid.*

*Scotopteryx versicolor* ab. *figurata* WARREN, 1902, *ibid.*

Usa River, 3900 ft, 4. V. 1965, 1 ♀. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♀; *ibid.*, 12. V. 1965, 1 ♀. W. slope of Mt Meru, Olkokola, 8700 ft, 16—19. VII. 1965, 2 ♂, 1 ♀; *ibid.*, 6—27. XII. 1966, 2 ♂, 3 ♀.

*Distribution.* E. Zaire, Uganda, Kenya, Tanzania.

***Ectropis inversa* FLETCHER**

*Ectropis inversa* FLETCHER, 1958, Stuttg. Beitr. Naturk., **14**: 4, figs. 2, 4, 5.

W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965, 2 ♂, 2 ♀.

*Distribution.* Tanzania, Mt. Kilimandjaro.

***Ectropis gozmanyi* sp. n.**

(Pl. 3, fig. 27; Pl. 12, figs. 108—111)

Vestiture and upperside of wings ivory irrorate and patterned with brown as illustrated. In one example each wing is densely suffused with brown distad of the postmedial fascia. Underside of wings light buff. Forewing suffused with greyish brown, except for terminal area; preapical area, between veins  $R_3$  and  $M_2$ , and discal spot densely greyish brown.

Male antenna bipectinate, pectinations twice as long as diameter of shaft; female antenna filiform.

Forewing length. ♂ 16.5—18 mm; ♀ 19—20 mm.

♂ genitalia (Pl. 12, figs. 108, 109). Dorsal surface of uncus coarsely spined. Apical fourth of aedeagus strongly sclerotized and produced in digitate form; an arcuate, digitate process, scobinate in apical third situate at right side of aedeagus, arising at one-half. Vesica with a short, apically scobinate cornutus, equal in length to width of aedeagus.

♀ genitalia (Pl. 12, figs. 110, 111).

Closely similar to *E. elaphrodes* FLETCHER (1958), and to *E. holmi* FLETCHER (1958) from Ruwenzori. Distinguished from both species in the male by the longer antennal pectinations and by the form of the uncus and aedeagus in the genitalia. The female of neither *elaphrodes* nor of *holmi* is known.

Holotype ♂, Tanzania: E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966 (DR. J. SZUNYOGHY). — Paratypes, 4 ♂, 2 ♀ with same data.

It is with pleasure that I name this distinctive species in honour of DR. L. GOZMÁNY, through whose kindness I have been able to study this fine collection.

***Cleora siderata* sp. n.**

(Pl. 3, fig. 28; Pl. 12, figs. 112—114)

Head and thorax dark grey, patagia edged with black; abdomen white varyingly irrorate with grey, segments edged posteriorly with black. Upperside of wings brownish grey; antemedial fascia on forewing, postmedial fascia on each wing black, sharply marked; medial fascia on each wing black and diffuse, that of forewing extending from posterior margin to base of veins  $M_3$  and  $Cu_1$ , then curving terminad; proximal third of forewing and a broad band, parallel with and distad of postmedial fascia on each wing, brown;



termen of each wing irrorate with black; terminal interneural spots black. Underside of wings grey, the transverse fasciae and discal spots marked in a darker shade.

Forewing length. ♂ 22—22.5 mm; ♀ 21—22 mm.

♂ genitalia (Pl. 12, figs. 112, 113). Apical half of sacculus arcuate and tapered, the tip not extending to the sclerotized dorsal margin of the valve. Vesica with two short, slender cornuti, one equal in length to, one subequal in length to the width of the aedeagus.

♀ genitalia (Pl. 12, fig. 114). Sterigma strongly sclerotized medially in digitate form, tapering anteriorly, where the sclerotization is one-third width of posterior margin of colliculum; posterior margin notched medially. Corpus bursae one and one-half times as long as greatest width of sterigma.

Closely related to *C. flavivenata* FLETCHER, 1967, known only from Cape Province and to *C. betularia* (WARREN, 1897) from Rhodesia and S. Africa. Distinguished externally from each by the colour and pattern of the wings, especially in the shape of the postmedial fascia, which though slightly crenulate, is curved shallowly between vein  $M_3$  and the costa; in the other two species it is strongly crenulate, obtusely angled on vein  $M_1$  and acutely angled between veins  $M_1$  and  $R_5$ . Distinguished in the male genitalia by the two very short cornuti. Distinguished in the female by the pattern of sclerotization of the sterigma, being notched posteriorly and tapered anteriorly, and by the shorter corpus bursae; in *flavivenata* and *betularia* the corpus bursae is at least twice as long as the greatest width of the sterigma.

Holotype ♂, Tanzania: W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965 (DR. J. SZUNYOGHY). — Paratypes, Tanzania: holotype data, 3 ♂, 1 ♀; E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966 (DR. J. SZUNYOGHY), 1 ♂.

The two male specimens from Malawi, recorded by FLETCHER, 1967, Bull. Br. Mus. nat. Hist. (Ent.) Suppl., 8: 22 as *Cleora betularia* (WARREN) are more closely related to *siderata*, both in maculation and in the structure of the genitalia.

#### *Cleora oculata* FLETCHER

*Cleora oculata* FLETCHER, 1967, Bull. Br. Mus. nat. Hist. (Ent.), Suppl., 8: 31, text-figs. 31—33, pl. 4, figs. 203—206, map 2.

Usa River, 3900 ft, 4. V. 1965, 1 ♂.

Distribution. Nigeria, Cameroun, Angola, Zaire, Uganda.

#### *Cleora lophia* sp. n.

(Pl. 3, figs. 25, 26; Pl. 12, figs. 116—118)

Wings ivory, varyingly suffused with pinkish buff and patterned with black, as illustrated. Closely similar in size and pattern to *C. herbuloti phaea* FLETCHER, 1967, from S. Africa and to *C. epiclithra* FLETCHER, 1967, from

E. Zaire and Rwanda and most reliably identified by the structure of the genitalia.

Closely related to *C. epiclithra*, from which it may be distinguished in the male by the form of the sacculus; the margin of the apical half is arcuate and coarsely serrate; in *epiclithra* it is tipped with a cluster of spines; the smoothly edged digitate process at base is twice as long as broad; in *epiclithra* it is as long as broad. The vesica in *lophia* bears two short, tapered cornuti, each just subequal in length to the width of the aedeagus; in *epiclithra* the vesica bears only one such cornutus.

In the female genitalia the form of the sclerotized sterigma is diagnostic (Pl. 12, fig. 116); the corpus bursae, very weakly sclerotized and ribbed in its posterior half, is two and three-fourths times as long as broad. In *epiclithra* (Pl. 12, fig. 115) the corpus bursae is weakly sclerotized and ribbed in its posterior sixth and six times as long as its greatest width.

Holotype ♂, Tanzania: E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966 (Dr. J. SZUYOGHY). — Paratypes, Tanzania: holotype data, 14 ♂, 1 ♀; *ibid.*, 8. V. 1965, 1 ♂.

#### *Cleora echinodes* FLETCHER

*Cleora echinodes* FLETCHER, 1967, Bull. Br. Mus. nat. Hist. (Ent.), Suppl., 8: 46, text-figs. 54—56, pl. 6, figs. 242, 246, map 3.

Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♂.

Distribution. Fernando Po, Cameroun, Zaire, Uganda, Malawi.

#### *Cleora thyris* FLETCHER

*Cleora thyris* FLETCHER, 1967, Bull. Br. Mus. nat. Hist. (Ent.) Suppl., 8: 62, text-figs. 81—83, pl. 8, figs. 274—280, map 4.

Usa River, 3900 ft, 23. IV. 1965, 1 ♂; *ibid.*, 21. V. 1965, 1 ♂; 10. VII. 1965, 1 ♂; IX. 1965—II. 1966, 4 ♂, 1 ♀. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 31 ♂, 5 ♀; *ibid.*, 8. V. 1965, 2 ♂.

Distribution. Ethiopia, Kenya, N. E. Zaire, Tanzania, Malawi.

#### *Cleora nigrisparsalis* (JANSE)

*Neocleora nigrisparsalis* JANSE, 1932, 1: 270, text-fig. 100, pl. 8, fig. 5.

*Cleora nigrisparsalis* (JANSE); FLETCHER, 1967, Bull. Br. Mus. nat. Hist. (Ent.), Suppl., 8: 64, text-figs. 84—86, pl. 8, figs. 281—286, map 4.

Usa River, 3900 ft, 4. VI. 1965, 1 ♂; *ibid.*, IX. 1965—II. 1966, 2 ♂, 1 ♀.

Distribution. E. Africa, Kenya to Natal, E. Zaire, Burundi, Angola.

#### *Cleora pavlitzkiae* (FLETCHER)

*Neocleora pavlitzkiae* FLETCHER, 1958, Veröff. zool. StSamml. Münch., 5: 139, pl. 2, figs. 8, 10, pl. 4, figs. 26—28; 1967, Bull. Br. Mus. nat. Hist. (Ent.) Suppl., 8: 92, text-figs. 123—135, pl. 12, figs. 349—362, map 6 (subspeciation and distribution).

W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965, 5 ♂.

In structure bearest to subsp. *etesiae* FLETCHER, 1967 from Ethiopia.

#### *Cleora rothkirchi rothkirchi* (STRAND)

*Boarmia rothkirchi* STRAND, 1914, Arch. Naturgesch., 80 (A), 1: 44.

*Cleora rothkirchi rothkirchi* (STRAND); FLETCHER, 1967, Bull. Br. Mus. nat. Hist. (Ent.) Suppl., 8: 109, text-figs. 144—146, pl. 14, figs. 380—385, map 8.



Lake Manyara, 3150 ft, 29. V. 1965, 1 ♀.

**D i s t r i b u t i o n.** W. Africa, Ivory Coast to Angola, Zaire, Uganda, Kenya, Tanzania, Mozambique, Rhodesia. Represented on Socotra and on parts of the Kenya coast by subsp. *amydropa* FLETCHER, (1967), and in Madagascar and in the Comoro Is. by subsp. *insularum* FLETCHER, (1967).

***Boarmia assimilis* (WARREN)**

*Selidosema assimilis* WARREN, 1902, Novit. zool., **9**: 522.

*Selidosema assimilis* ab. *separata* WARREN, 1902, ibid.

W. slope of Mt Meru, Olkokola, 8700 ft, 6—27. XII. 1965, 1 ♂.

**D i s t r i b u t i o n.** Kenya, Tanzania, Cameroun, Mt Cameroun.

***Ascotis selenaria reciprocaria* (WALKER)**

*Boarmia reciprocaria* WALKER, 1860, List Specimens lepid. Insects Colln Br. Mus., **21**: 366.

*Ascotis selenaria reciprocaria* (WALKER); FLETCHER, 1963, Explor. Parc natn. Albert (2) **15**: 33 (synonymy and distribution).

Usa River, 3900 ft, 6. VI. 1965, 1 ♂; ibid. IX. 1965—II. 1966, 3 ♂. E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂.

**D i s t r i b u t i o n.** Africa, south of Sahara, Madagascar.

***Oedicentra albipennis* WARREN**

*Oedicentra albipennis* WARREN, 1902, Novit. zool., **9**: 525.

E. slope of Mt Meru, 5700 ft, 8. V. 1965, 3 ♂; ibid., 21. I.—1. II. 1966, 7 ♂.

**D i s t r i b u t i o n.** Fernando Po, Cameroun, Mt. Cameroun, Zaire, Kenya to Cape Province.

***Heterostegane serrata* (FLETCHER) ? subsp.**

*Lomographa serrata* FLETCHER, 1958, Ruwenzori Expedn 1952, **1** (6): 139, figs. 58, 59, 71, 218, 221.

The Tanzanian specimens recorded below are smaller and paler than in the type series from Arabia and Ethiopia and in the male genitalia the valves are more slender, being about one-half as broad as in typical specimens.

Lake Sereri, 3150 ft, 17—24. VIII. 1965, 5 ♂, 6 ♀; ibid., 25. IX. 1965, 1 ♂. Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♂. Katesh, 5900 ft, 25—30. VI. 1965, 7 ♂, 3 ♀.

**D i s t r i b u t i o n.** Arabia, Somalia, Kenya, Uganda, Niger.

***Heterostegane aridata* WARREN**

*Heterostegane aridata* WARREN, 1897, Novit. zool., **4**: 78.

Lake Sereri, 3150 ft, 15—25. VIII. 1965, 3 ♂; ibid., 26. IX. 1965, 1 ♂. Lake Manyara, 3150 ft, 13. VI. 1965, 1 ♀. Usa River, 3900 ft, IX. 1965—II. 1966, 1 ♂. Katesh, 5900 ft, 30. VI. 1965, 1 ♀.

**D i s t r i b u t i o n.** Natal, Cape Province, S. W. Africa.

***Chloroctenis conspersa* WARREN**

*Chloroctenis conspersa* WARREN, 1909, Novit. zool., **16**: 114.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♀.

**D i s t r i b u t i o n.** Tanzania, Mozambique, Rhodesia, S. Africa.

***Zamarada latilimbata* REBEL**

*Zamarada latilimbata* REBEL, 1948, Z. wien. ent. Ges., **32**: 59.

*Zamarada latilimbata* REBEL; FLETCHER, 1974: 30, figures; distribution.

Lake Manyara, 3150 ft, 21. VI. 1965, 1 ♀.

***Zamarada cinnamomata* sp. n.**

(Pl. 3, fig. 30; Pl. 11, figs. 106, 107)

♂. Vestiture vinaceous buff irrorate with cinnamon. Forewing. Hyaline area of wing irrorate with cinnamon, more densely in distal half; antemedial fascia cinnamon; basal area vinaceous buff irrorate with cinnamon; costa cinnamon; discal spot grey edged with cinnamon. Non-hyaline terminal third vinaceous buff suffused with cinnamon, more densely in proximal half of apical and tornal areas. Hindwing. Hyaline area lightly irrorate with cinnamon, principally in form of a diffuse, medial shade; discal spot minute, fuscous. Non-hyaline terminal third vinaceous buff, uniformly and lightly suffused with cinnamon.

Measurements. Forewing 10–11 mm. Antennal pectinations  $7\times$  diameter of shaft.

♂ genitalia (Pl. 11, figs. 106, 107). Apex of uncus bluntly rounded. Valve simple, apex rounded; dorsal process angled at two-thirds, without projection, similar to *Z. anacantha* FLETCHER, 1974. Aedeagus with diagonal, scobinate band in apical third and a strong, thorn-like subapical projection. Fulcrum one-third as long as aedeagus, only weakly sclerotized. Vesica with a dense cluster of spines, equal in length to width of aedeagus.

♀. Unknown.

Similar in colour to forms of *Z. townsendi* FLETCHER, 1974, but distinguished by the absence of any trace of a subterminal fascia. Distinguished in the genitalia by the broader and more broadly rounded valve, by the form of the fulcrum and by the ornamentation of the aedeagus.

Holotype ♂, Tanzania: Amani, XII. 1961 (G. PRINGLE), Geometridae genitalia slide no. 7090, in BMNH. — Paratypes, Tanzania: Lake Manyara, 3150 ft, 21. VI. 1965, 1 ♂; Usa River, 3900 ft, 12. VII. 1965, 1 ♂, both (DR. J. SZUNYOGHY), in Hungarian Natural History Museum.

***Zamarada phratra* sp. n.**

(Pl. 3, fig. 31; Pl. 11, figs. 104, 105)

Closely similar in colour and pattern and in structure to *Z. anacantha* FLETCHER, 1974, of which the Tanzanian specimens here described may represent a subspecies.

Distinguished in the male genitalia by the presence of a spine-like projection from two-thirds dorsal process of valve and by the longer fulcrum attached to the aedeagus. In *anacantha* the fulcrum is three-fourths as long as, and does not reach the tip of the aedeagus; in *phratra* it is equal in length to, and extends well beyond the tip of the aedeagus.

The female genitalia do not appear to differ.



Holotype ♂, Tanzania: Usa River, 3900 ft, 29. IV. 1965 (Dr. J. SZUNYOGHY). — Paratypes, Tanzania: holotype locality, 25. IV. 1965, 1 ♀; *ibid.*, 26. IV. 1965, 1 ♀; 1. V. 1965, 1 ♀; IX. 1965—II. 1966, 1 ♀, all in Hungarian Natural History Museum; W. Kilimandjaro, Ngare-Nairobi, 4—5000 ft, II—III. 1937 (B. COOPER), 1 ♂ in BMNH.

***Zamarada deceptrix* WARREN**

*Zamarada deceptrix* WARREN, 1914, Ann. S. Afr. Mus., **10**: 485.

*Zamarada deceptrix* WARREN; FLETCHER, 1974: 38, figures, distribution.

Usa River, 3900 ft, 17. V. 1965, 1 ♀.

***Zamarada ordinaria* BETHUNE-BAKER**

*Zamarada ordinaria* BETHUNE-BAKER, 1913, Ann. Mag. nat. Hist., (8) **11**: 573.

*Zamarada ordinaria* BETHUNE-BAKER; FLETCHER, 1974: 45, figures, synonymy, distribution.

Usa River, 3900 ft, 29. IV. 1965, 1 ♂; *ibid.*, IX. 1965—II. 1966, 3 ♀.

***Zamarada torrida* FLETCHER**

*Zamarada torrida* FLETCHER, 1974: 53, figures; distribution.

Lake Manyara, 3150 ft, 19—23. VI. 1965, 2 ♀. Lake Sereri, 3150 ft, 15—26. VIII. 1965, 2 ♂, 3 ♀; *ibid.*, 25. IX. 1965, 1 ♀. Usa River, 3900 ft, 19. IV. 1965, 1 ♂.

***Zamarada hyalinaria* (GUENÉE)**

*Stegania hyalinaria* GUENÉE, 1857, in: BOISDUVAL and GUENÉE, Hist. nat. Insectes, Spec. gén. Lépid., **10**: 45.

*Zamarada hyalinaria* (GUENÉE); FLETCHER, 1974: 57, figures, distribution.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 1 ♂.

***Zamarada ochrata* WARREN**

*Zamarada ochrata* WARREN, 1902, Novit. zool., **9**: 518.

*Zamarada ochrata* WARREN; FLETCHER, 1974: 58, figures; distribution.

Lake Sereri, 3150 ft, 16. VIII.—28. IX. 1965, 6 ♀. Usa River, 3900 ft, 19. IV.—4. V. 1965, 1 ♂, 1 ♀; *ibid.*, IX. 1965—II. 1966, 1 ♀.

***Zamarada melasma* FLETCHER**

*Zamarada melasma* FLETCHER, 1974: 59, figures; distribution.

Lake Sereri, 3150 ft, 25. IV. 1965, 1 ♀. Rungwa, 4200 ft, 21. X. 1965, 1 ♀. Katesh, 5900 ft, 29. VI. 1965, 1 ♀.

***Zamarada psectra* FLETCHER**

*Zamarada psectra* FLETCHER, 1974: 84, figures; distribution.

Usa River, 3900 ft, IX. 1965 — II. 1966, 1 ♂

***Zamarada excavata excavata* BETHUNE-BAKER**

*Zamarada excavata* BETHUNE-BAKER, 1913, Ann. Mag. nat. Hist., (8) **11**: 573.

*Zamarada excavata* BETHUNE-BAKER; FLETCHER, 1974: 85, figures, subspeciation and distribution.

E. slope of Mt Meru, 5700 ft, 21. I.—1. II. 1966, 2 ♂, 2 ♀.

***Zamarada iobathra* PROUT**

*Zamarada iobathra* PROUT, 1932, Mém. Soc. zool. Fr., **29**: 507.

*Zamarada iobathra* PROUT; FLETCHER, 1974: 134, figures; distribution.

Katesh, 5900 ft, 29. VI. 1965, 1 ♀.

**Zamarada denticatella** PROUT

*Zamarada denticatella* PROUT, 1922, Ann. Transv. Mus., **8**: 180.

*Zamarada denticatella* PROUT; FLETCHER, 1974: 171, figures; distribution.

Katesh, 5900 ft, 28. VI. 1965, 1 ♀.

**Zamarada plana denticincta** HAMPSON

*Zamarada denticincta* HAMPSON, 1910, Proc. zool. Soc. Lond., **1910**: 469, pl. 39, fig. 6.

*Zamarada plana denticincta* HAMPSON; FLETCHER, 1974: 184, figures; distribution.

Usa River, 3900 ft, 29. IV. 1965, 1 ♂.

**Zamarada rhamphis** FLETCHER

*Zamarada rhamphis* FLETCHER, 1974: 234, figures; distribution.

Usa River, 3900 ft, 29. IV. 1965, 1 ♀.

**Rhodophthitus arichannaria** sp. n.

(Pl. 3, fig. 29)

Antenna light orange. Palpus light orange, basal two segments densely scaled with black. Ventral fourth of frons light orange, upper part and head black. Collar light orange. Tegulae black, light buff at base. Patagia and thorax black with light buff irroration. Abdomen light orange irrorate with black. Upperside. Forewing light buff suffused with light orange along costa and termen; hindwing light orange; both patterned with black, as illustrated. Underside light orange; pattern similar to that of upperside, but dark grey.

Forewing length. 31.5—32.5 mm.

Strikingly distinct in colour and pattern, reminiscent of species of *Arichanna* MOORE, 1868, occurring in the Oriental region. Closely related to *R. tricoloraria* (MABILLE, 1890), placed tentatively by PROUT in *Rhodophthitus*; the genitalia of both sexes of *tricoloraria* are closely similar in structure to those of *Xylopteryx* GUENÉE, 1857, but differ in the male in the presence of coremata of the valves.

Holotype ♀, Tanzania: W. slope of Mt Meru, Olkokola, 8700 ft, 10. VII. 1965 (DR. J. SZUNYOGHY). — Paratypes, *ibid.*, 6—27. XII. 1965, 2 ♀.

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### Plate 1

- Fig. 1. *Comostolopsis simplex viridicilia* subsp. n., Paratype ♀ (×2)
- Fig. 2. *Comostolopsis glos* sp. n., Paratype ♀ (×2)
- Fig. 3. *Prasinocyma croca* sp. n., Holotype ♂ (×1)
- Fig. 4. *Prasinocyma albisticta* WARREN, ♀ (×2)
- Fig. 5. *Tropicollesis albiceris* PROUT, ♂ (×2)
- Fig. 6. *Scopula galactina* sp. n., Paratype ♀ (×2)
- Fig. 7. *Acidaliastis systema* sp. n., Paratype ♀ (×2)
- Fig. 8. *Zygophyxia toquilla* sp. n., Holotype ♂ (×2)
- Fig. 9. *Idaea enargeia* sp. n., Holotype ♂ (×2)
- Fig. 10. *Idaea leptatibia* sp. n., Holotype ♂ (×2)
- Fig. 11. *Eupithecia isopsaliodes* sp. n., Paratype, ♂ (×2)
- Fig. 12. *Eupithecia isopsaliodes* sp. n., Paratype ♀ (×2)

### Plate 2

- Fig. 13. *Mimoclystia toxeres* sp. n., Holotype ♂ (×2)
- Fig. 14. *Mimoclystia toxeres* sp. n., Paratype ♀ (×2)
- Fig. 15. *Tephрина arizela* sp. n., Holotype ♂, Upperside (×2)
- Fig. 16. *Tephрина arizela* sp. n., Underside (×2)
- Fig. 17. *Eupithecia astales* sp. n., Holotype ♀ (×2)
- Fig. 18. *Eupithecia nigrataenia* sp. n., Paratype ♀ (×2)

- Fig. 19. *Eupithecia phaiosata* sp. n., Paratype ♀ (×2)  
 Fig. 20. *Psilocerea leptosyne* sp. n., Paratype ♂ (×1)  
 Fig. 21. *Psilocerea szunyoghyi* sp. n., Paratype ♂ (×1)  
 Fig. 22. *Psilocerea szunyoghyi* sp. n., Paratype ♀ (×1)

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 Fig. 25. *Cleora lophia* sp. n., Holotype ♂ (×1)  
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 Fig. 44. *Mixocera albistrigata* PAGENSTECHER, ♂ 8th sternite (×65)  
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- Fig. 49. *Tropiccollesis albiceris* PROUT, ♂ genitalia (×23)  
 Fig. 50. *Tropiccollesis albiceris* PROUT, ♂ 8th sternite (×50)  
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 Fig. 52. *Acidaliastis systema* sp. n., ♂ genitalia (×42)  
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 Fig. 54. *Acidaliastis systema* sp. n., ♀ genitalia (×30)  
 Fig. 55. *Scopula galactina* sp. n., ♂ genitalia (×45)  
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 Fig. 60. *Scopula galactina* sp. n., ♀ genitalia ( $\times 27$ )  
 Fig. 61. *Zygophyxia toquilla* sp. n., aedeagus ( $\times 60$ )  
 Fig. 62. *Idaea leptatibia* sp. n., aedeagus ( $\times 50$ )  
 Fig. 63. *Idaea enargeia* sp. n., ♂ genitalia ( $\times 27$ )  
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 Fig. 70. *Eupithecia astales* sp. n., ♂ 8th sternite ( $\times 50$ )  
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 Fig. 72. *Eupithecia nigrataenia* sp. n., ♂ genitalia ( $\times 20$ )  
 Fig. 73. *Eupithecia nigrataenia* sp. n., ♂ 8th sternite ( $\times 50$ )  
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 Fig. 75. *Eupithecia astales* sp. n., ♀ genitalia ( $\times 25$ )  
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 Fig. 79. *Eupithecia isopsaliodes* sp. n., ♂ 8th sternite ( $\times 40$ )  
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 Fig. 82. *Eupithecia phaiosata* sp. n., aedeagus ( $\times 50$ )  
 Fig. 83. *Eupithecia phaiosata* sp. n., ♂ genitalia ( $\times 25$ )  
 Fig. 84. *Eupithecia phaiosata* sp. n., ♂ 8th sternite ( $\times 50$ )  
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- Fig. 86. *Psilocerea leptosyne* sp. n., ♂ genitalia ( $\times 13$ )  
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 Fig. 89. *Psilocerea szunyoghyi* sp. n., ♀ genitalia ( $\times 10$ )  
 Fig. 90. *Psilocerea szunyoghyi* sp. n., ♂ genitalia ( $\times 20$ )  
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 Fig. 92. *Tephрина arizela* sp. n., ♂ 8th sternite ( $\times 20$ )  
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- Fig. 99. *Semiothisa procidata* GUENÉE, ♀ genitalia ( $\times 13$ )  
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 Fig. 101. *Semiothisa turbulentata* GUENÉE, aedeagus ( $\times 13$ )  
 Fig. 102. *Semiothisa turbulentata* GUENÉE, ♀ genitalia ( $\times 10$ )  
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- Fig. 108. *Ectropis gozmanyi* sp. n., ♂ genitalia ( $\times 20$ )  
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 Fig. 114. *Cleora siderata* sp. n., ♀ genitalia ( $\times 12$ )  
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 Fig. 117. *Cleora lophia* sp. n., aedeagus ( $\times 15$ )  
 Fig. 118. *Cleora lophia* sp. n., ♂ genitalia ( $\times 15$ )



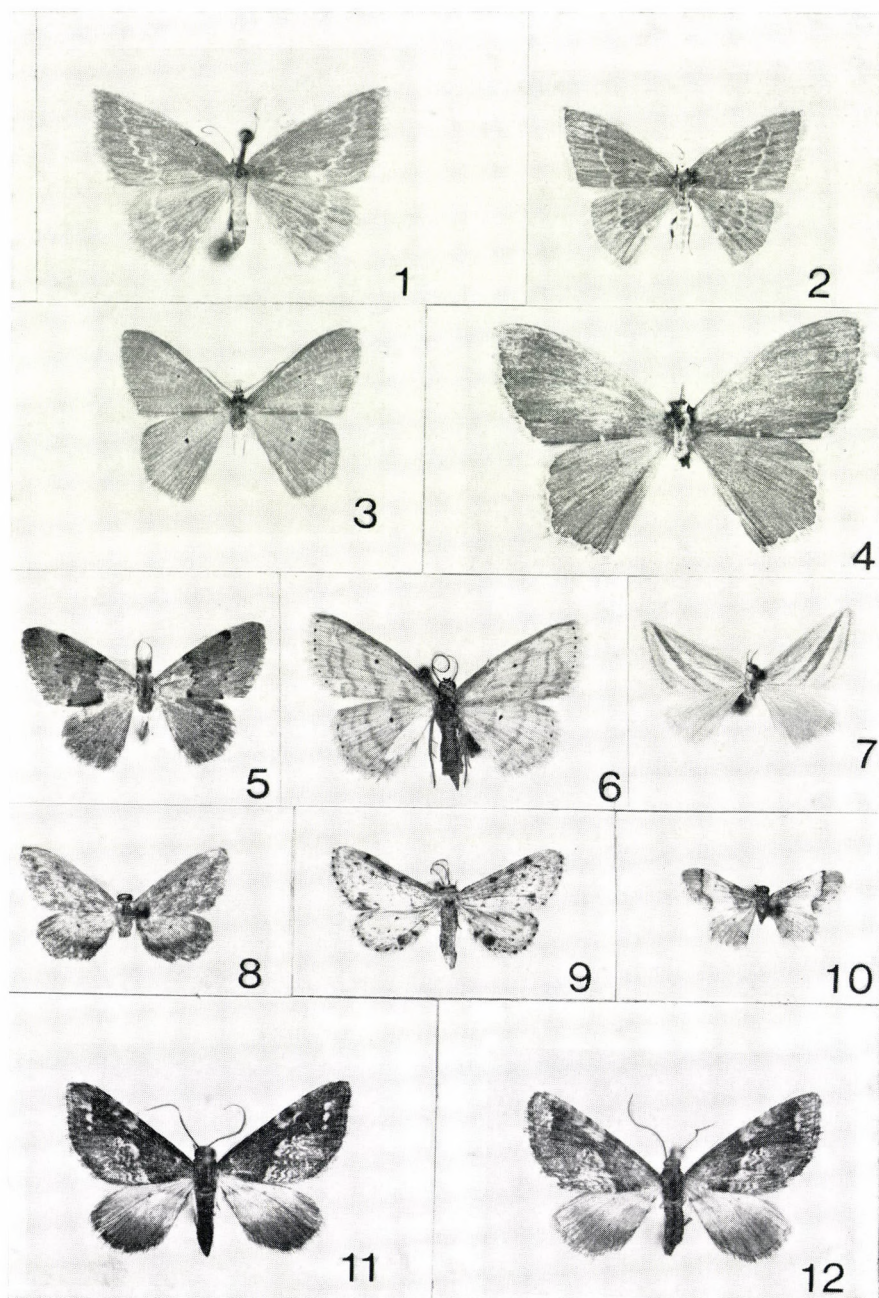


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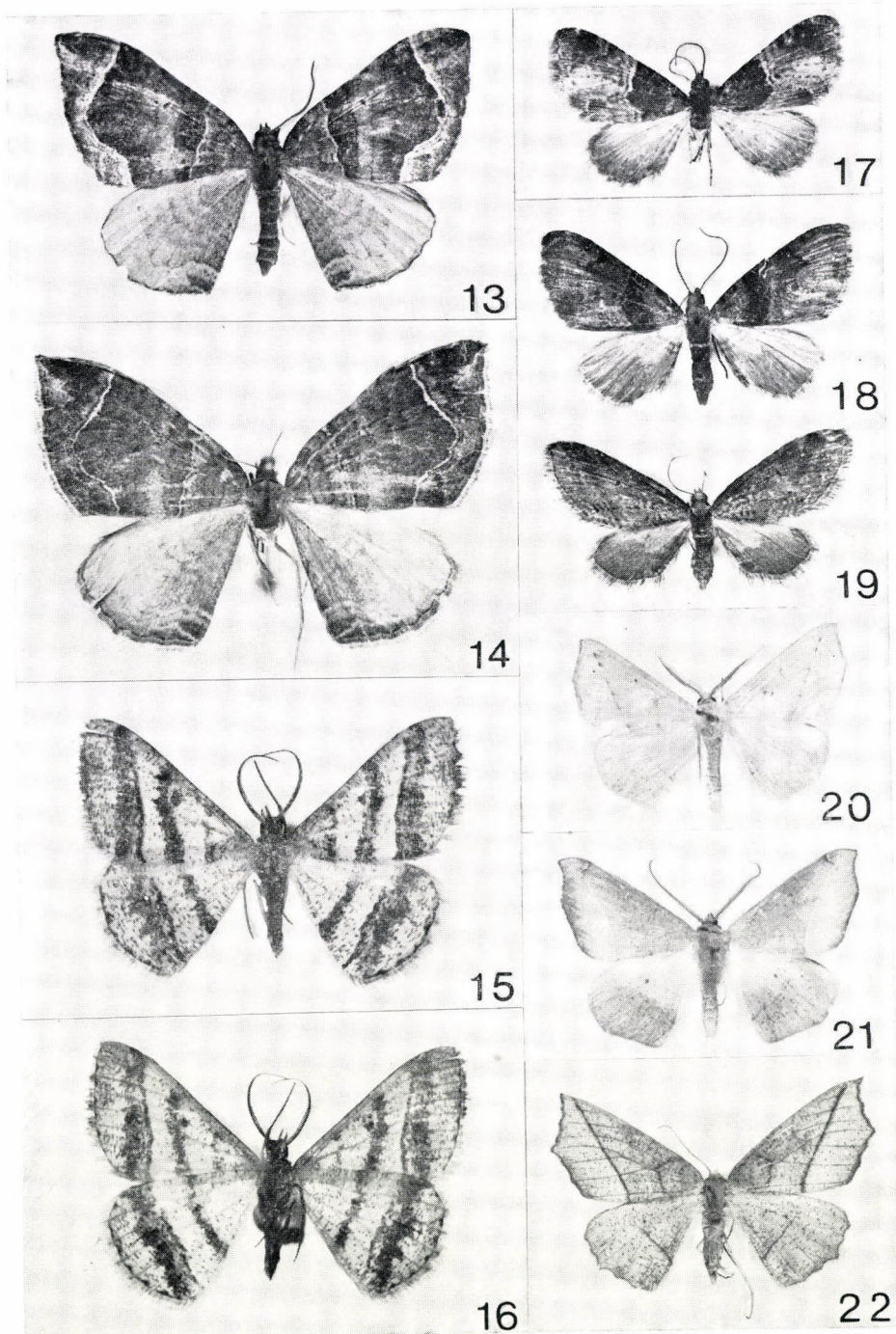


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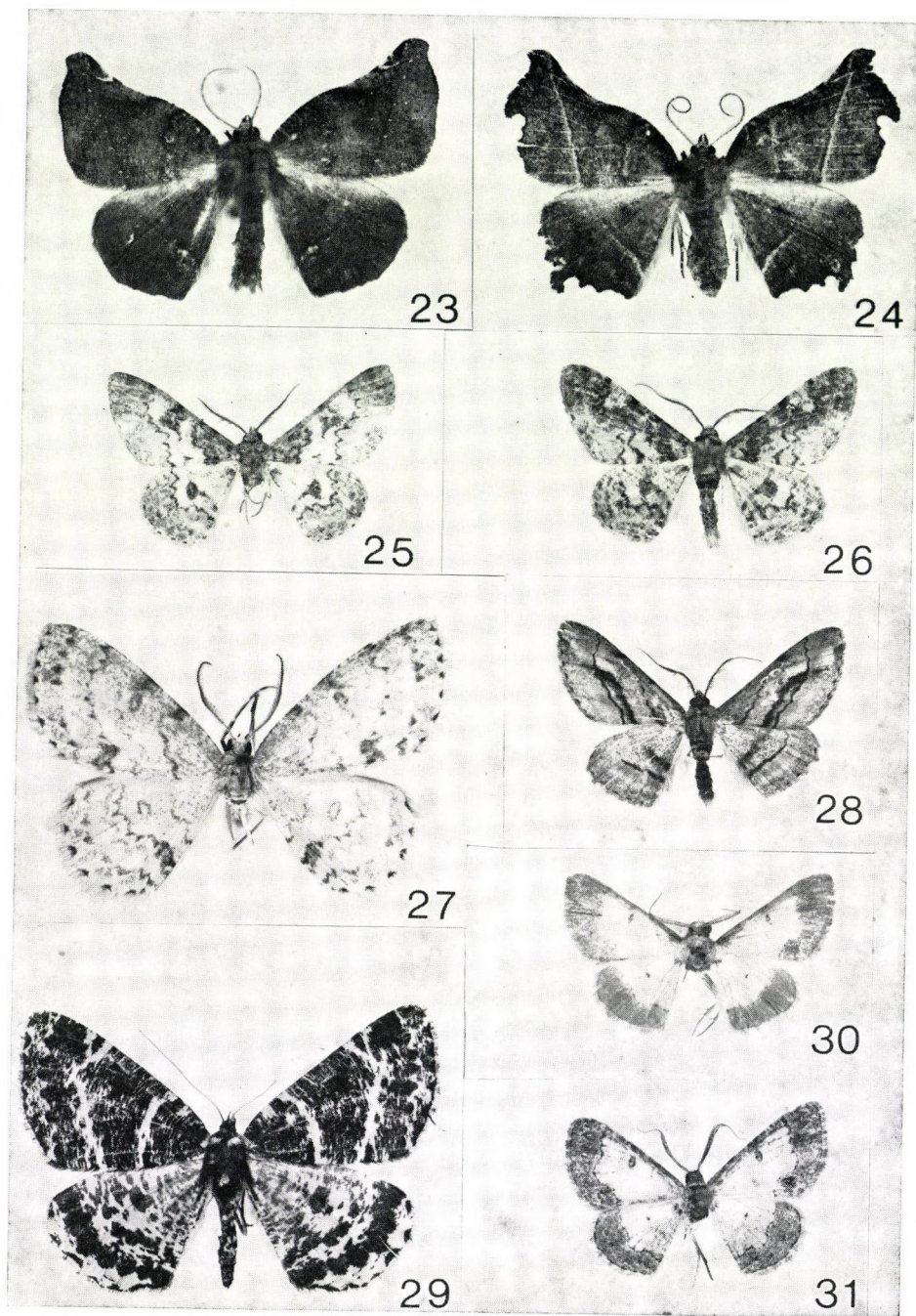


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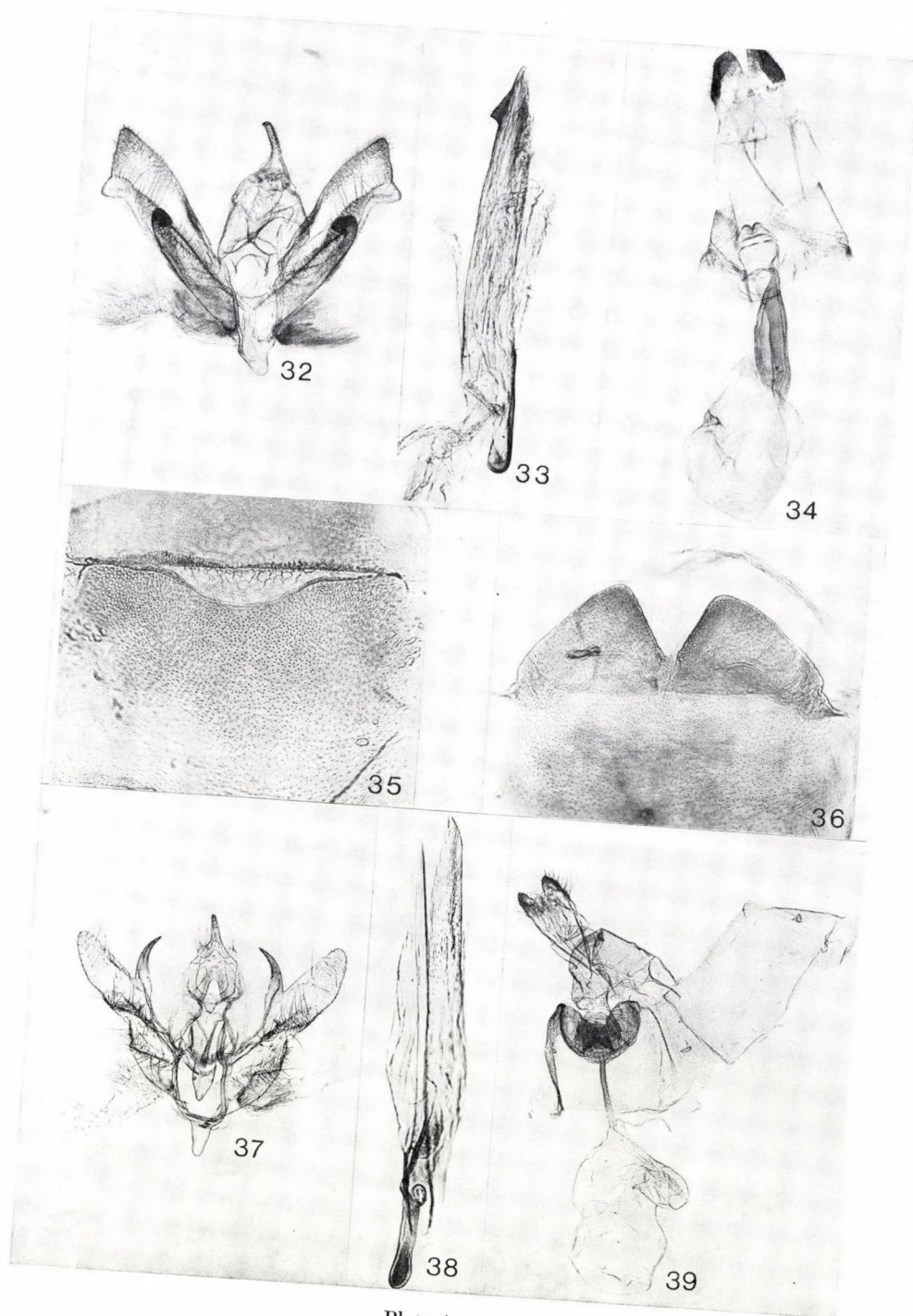


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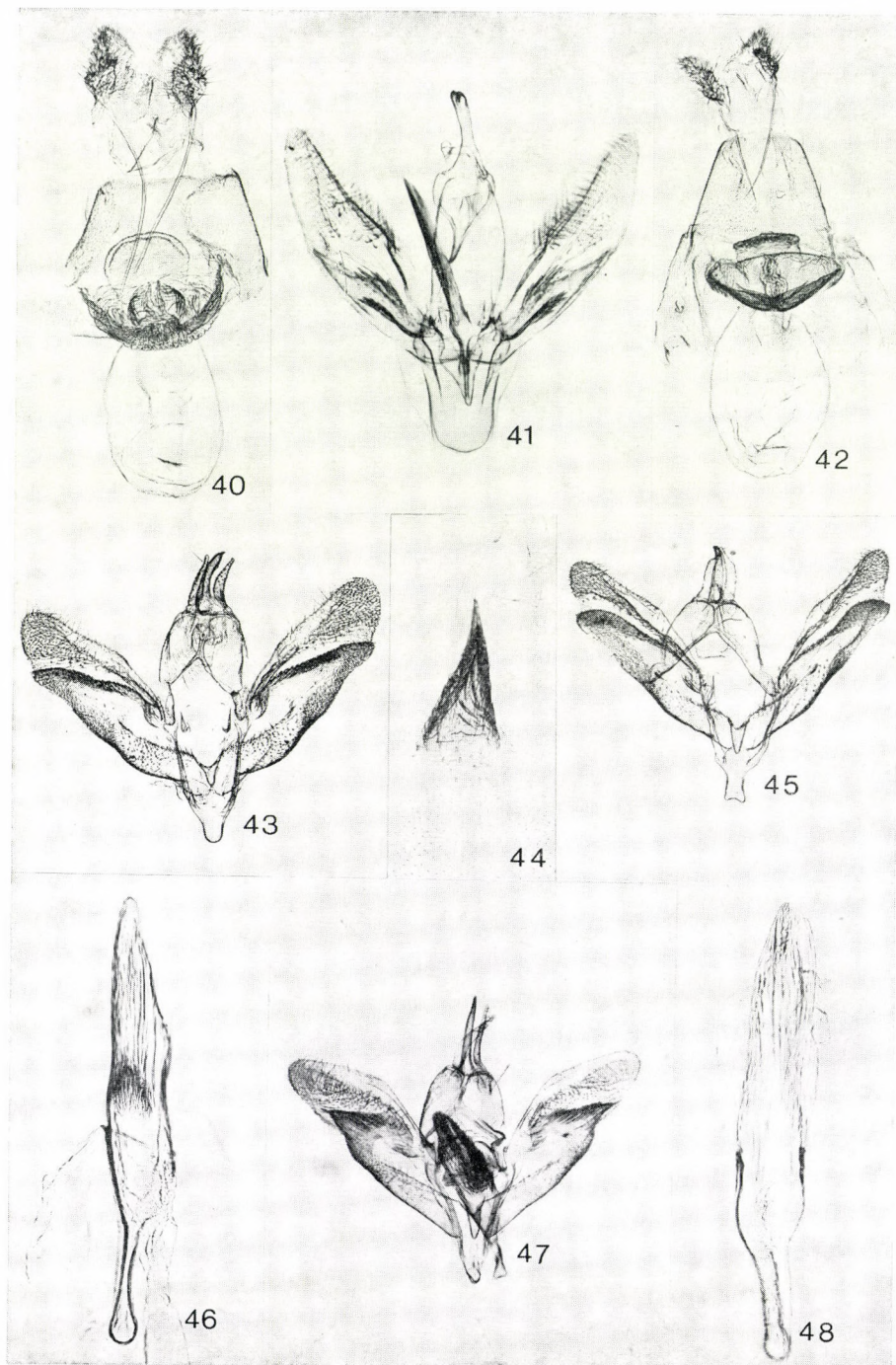


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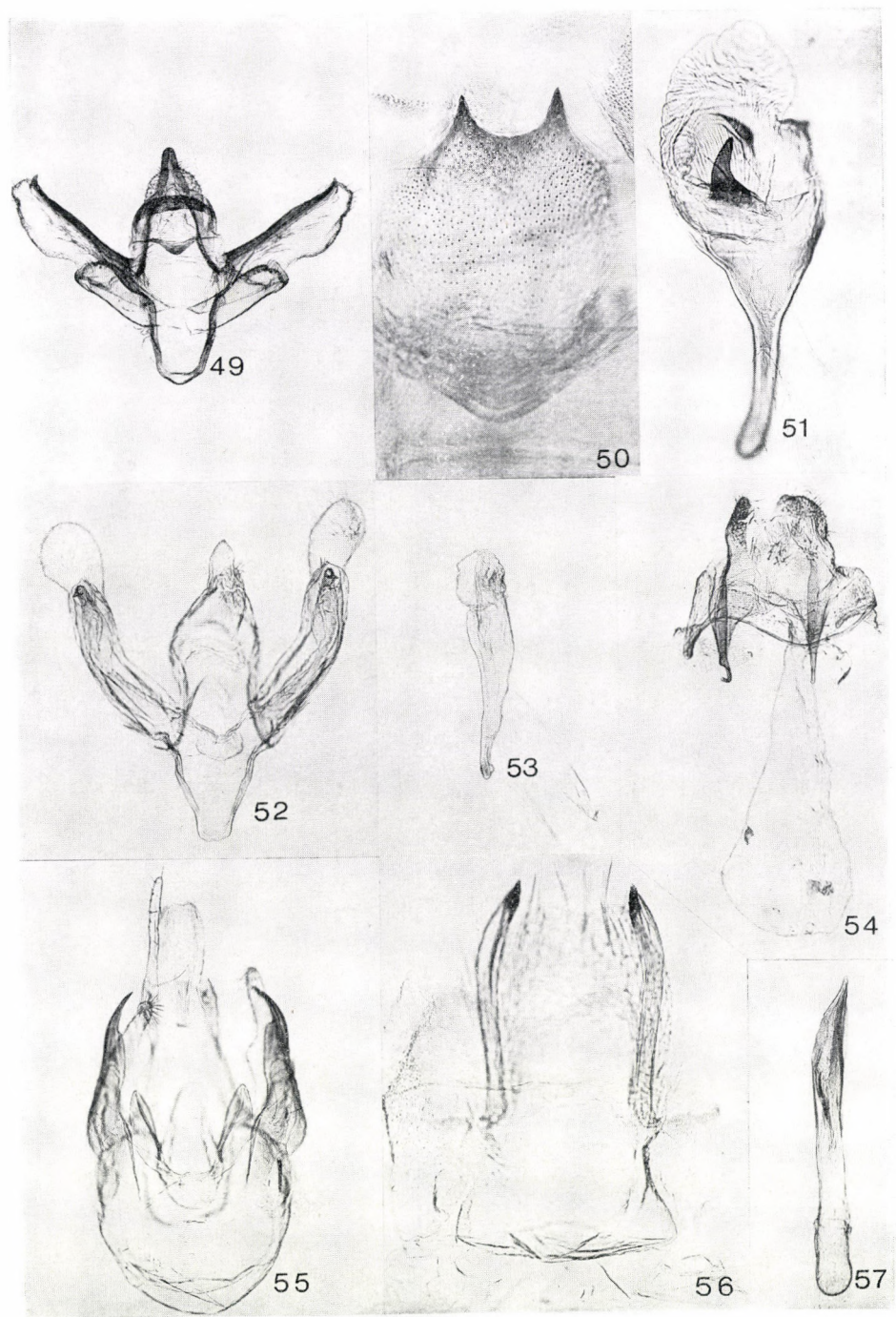


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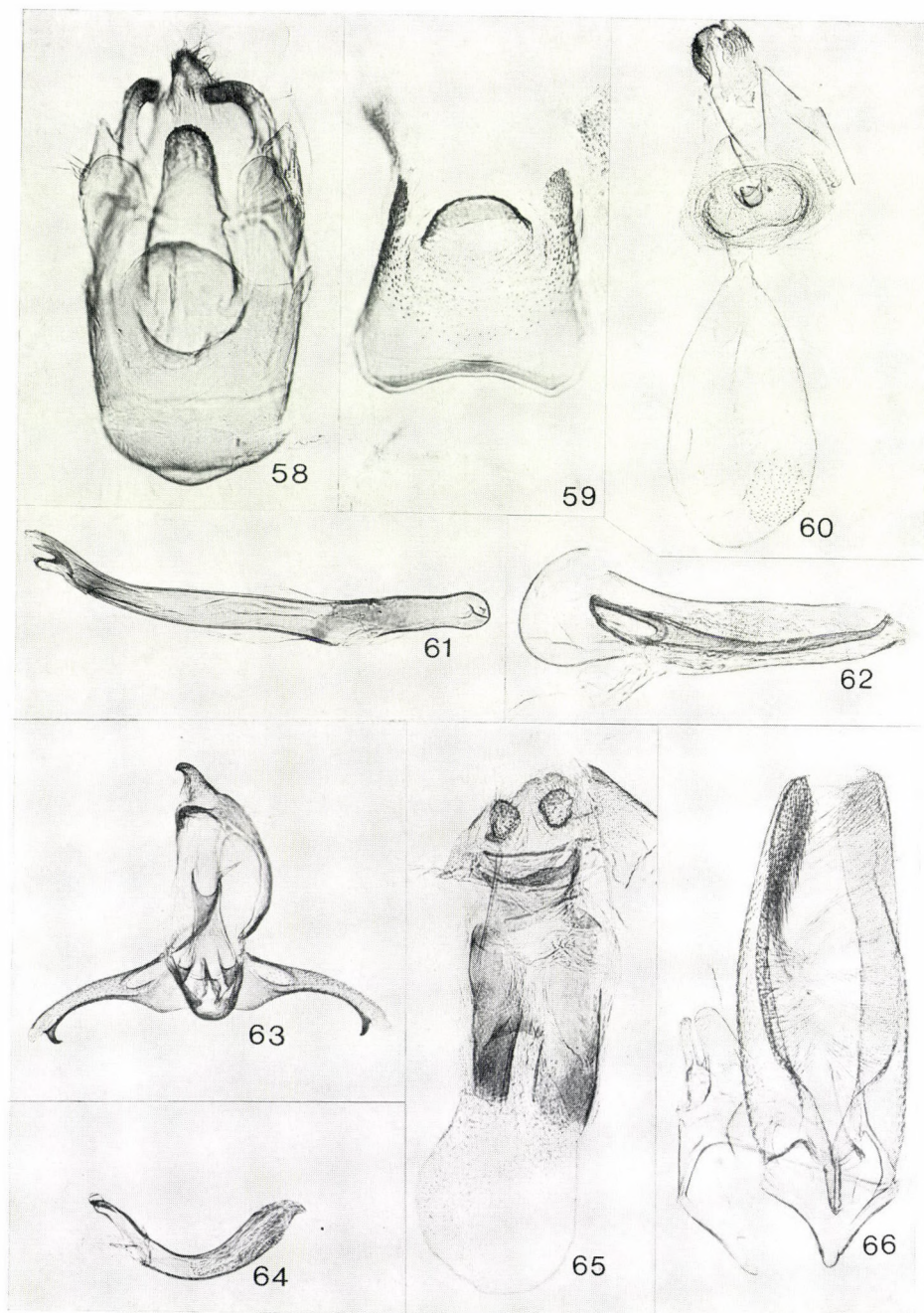


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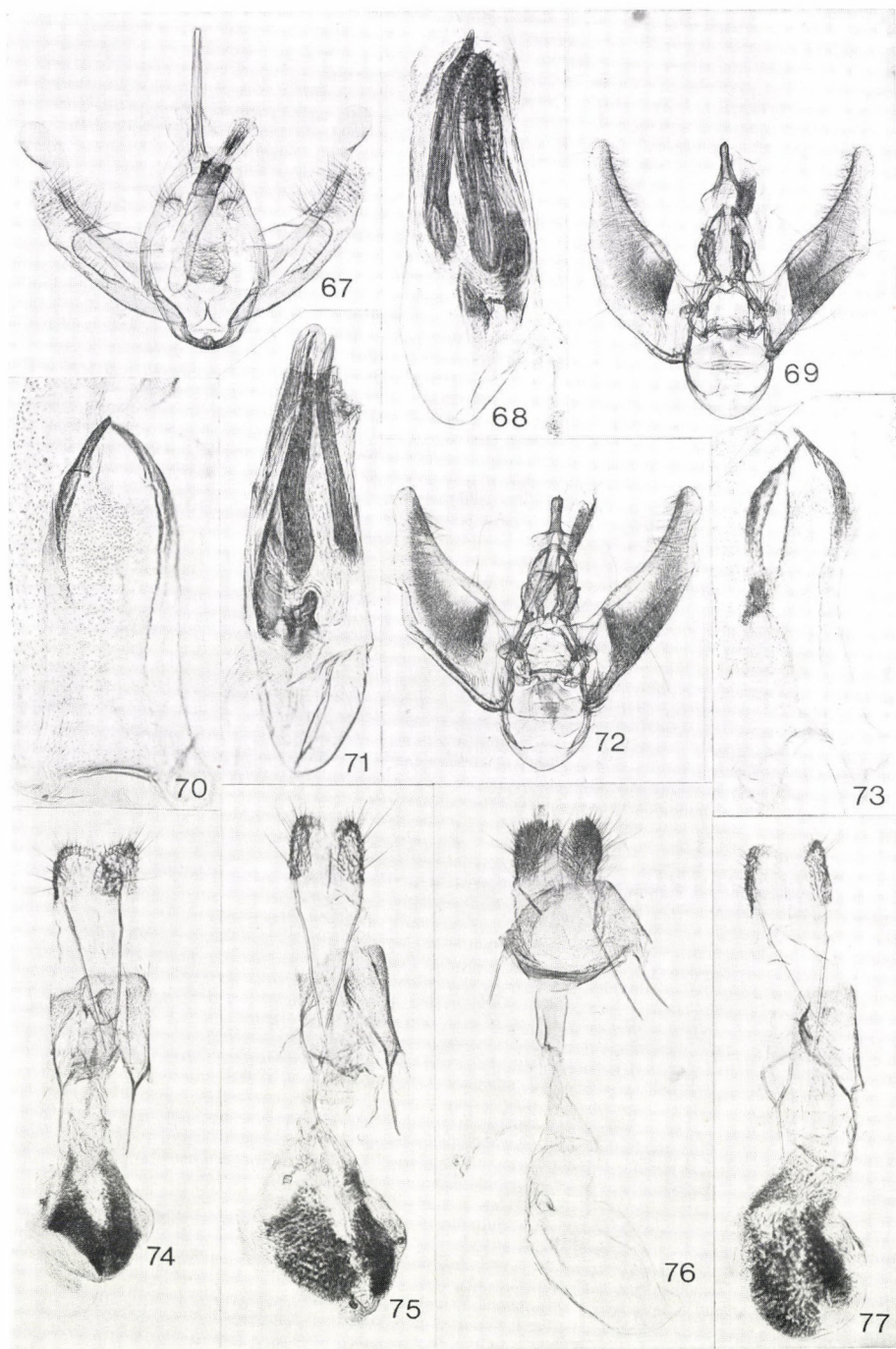


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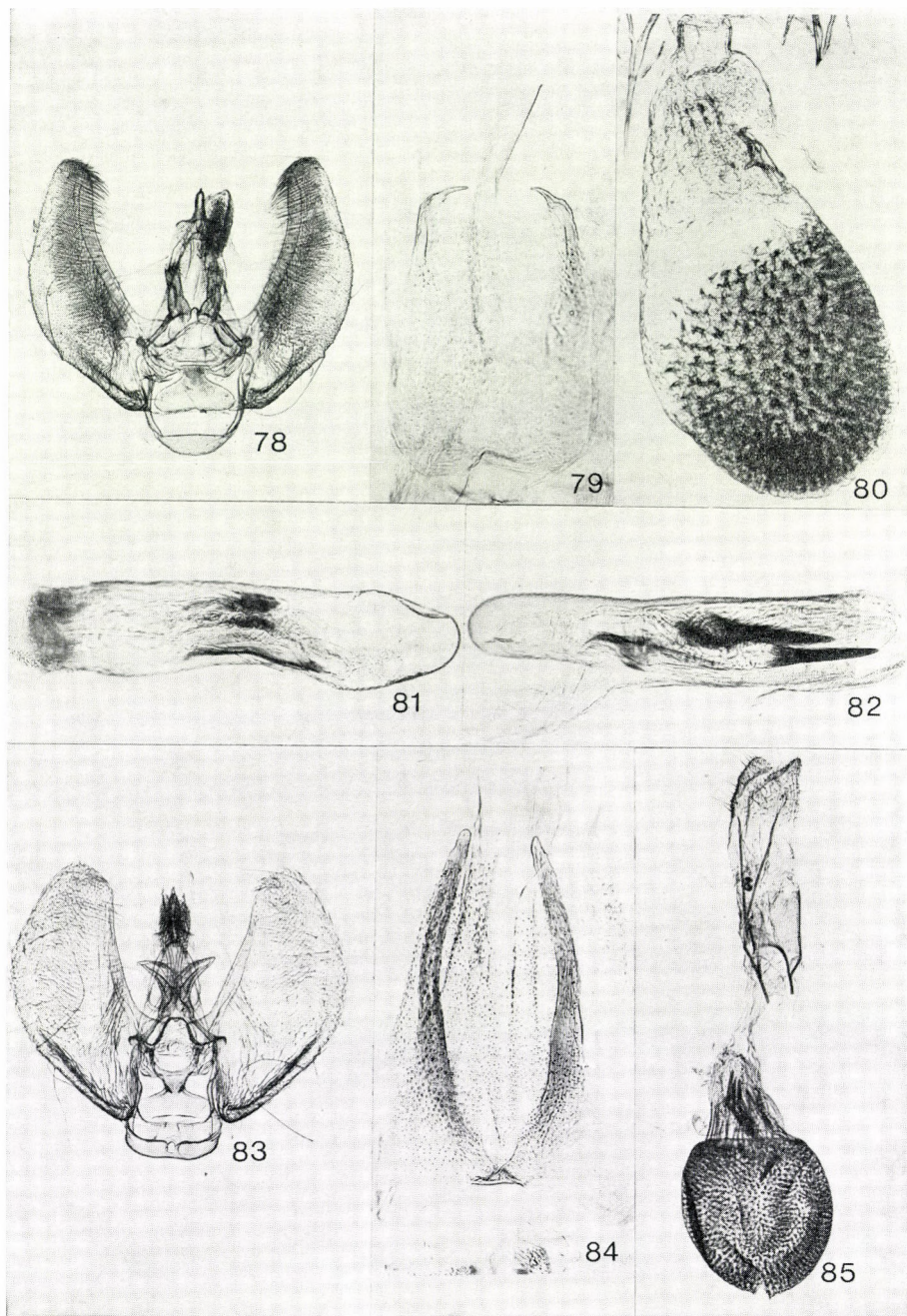


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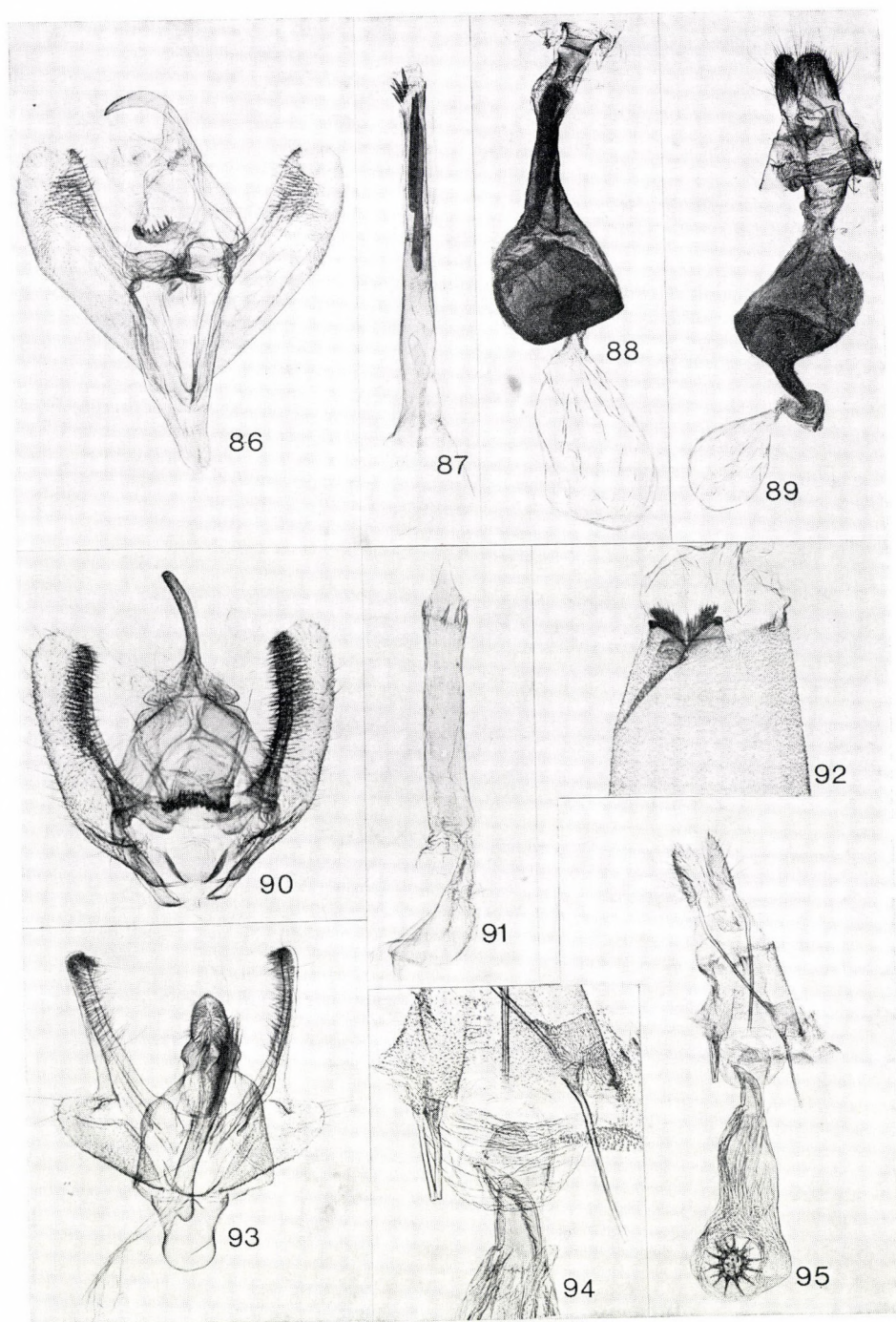


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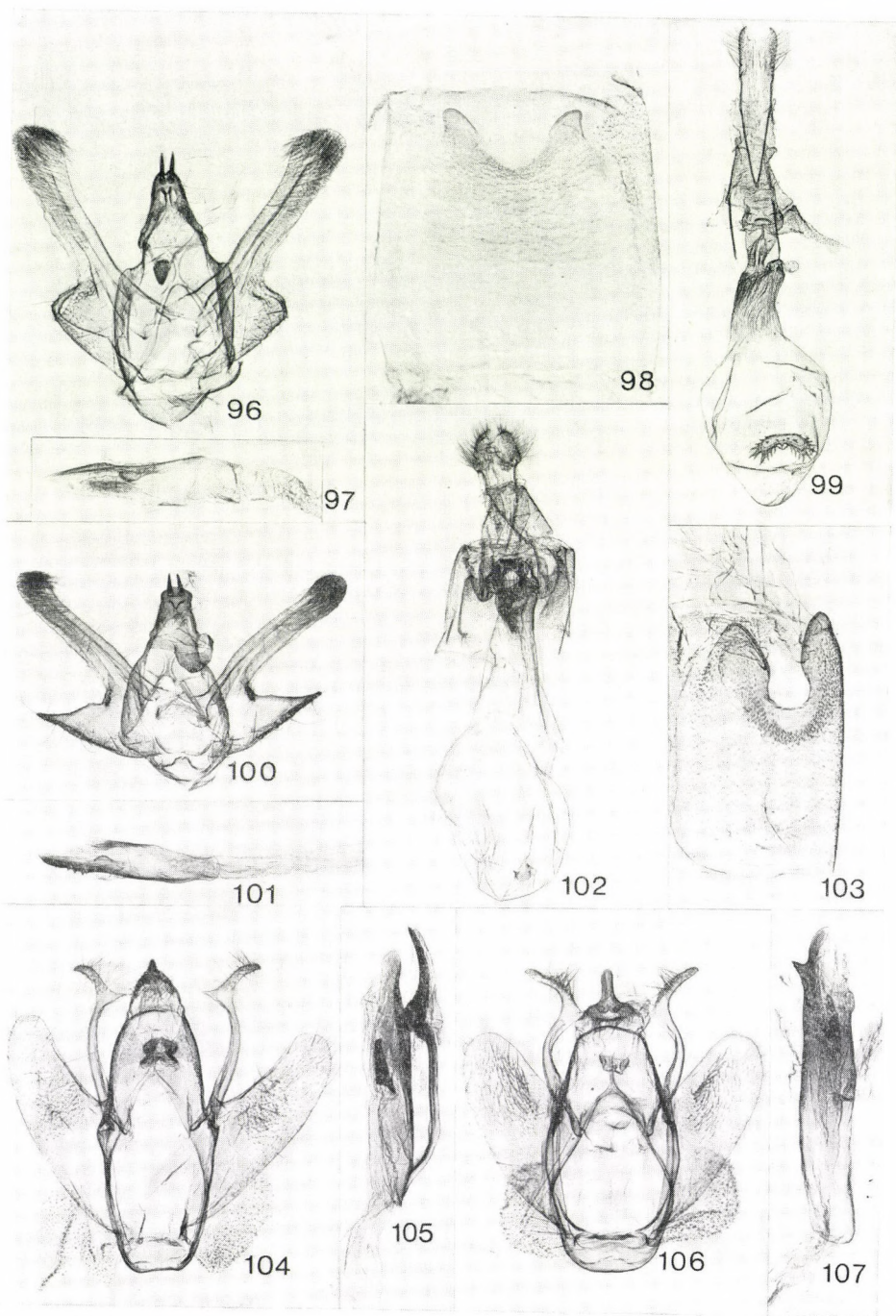


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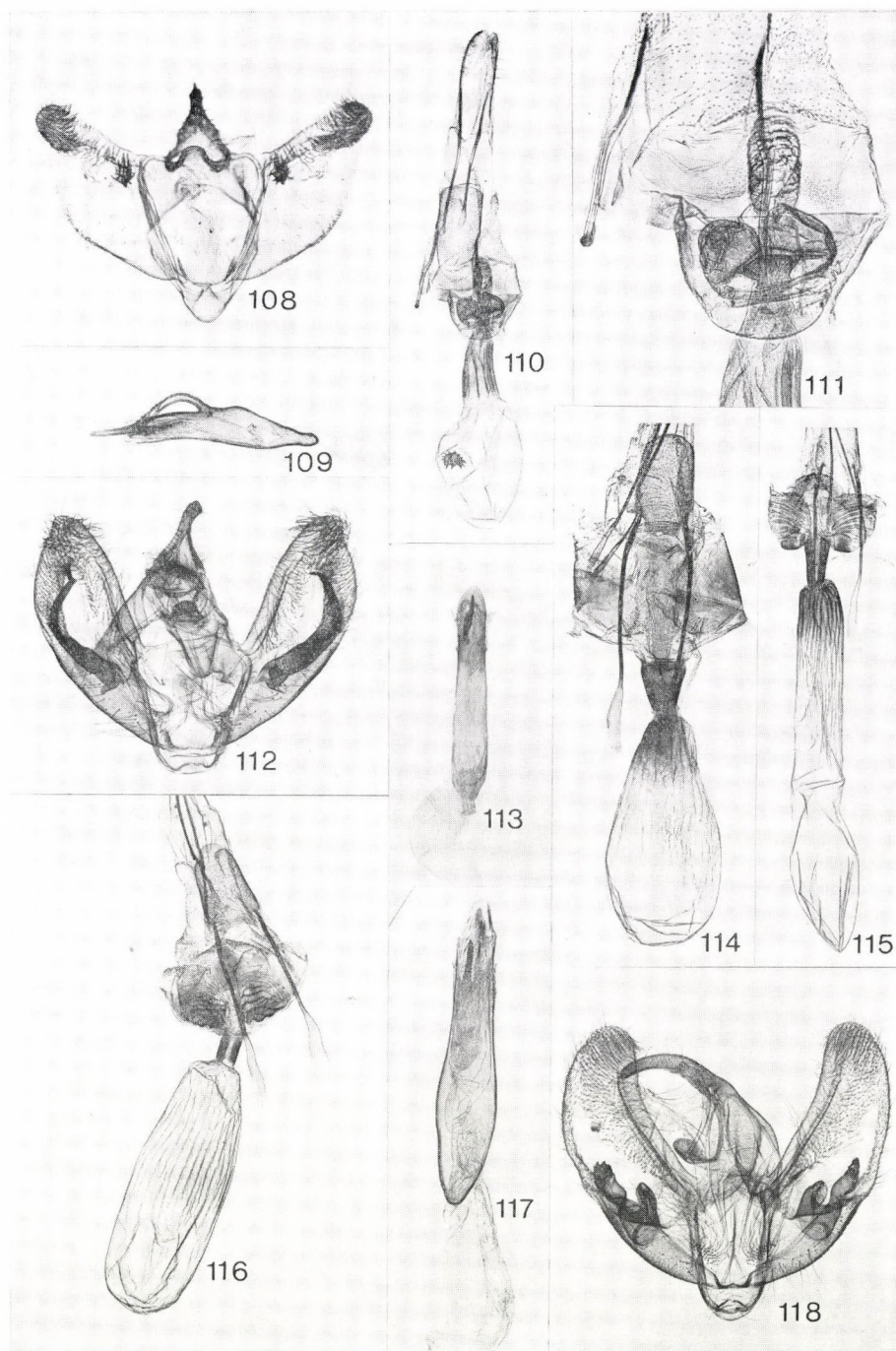


Plate 12





## SCHIZOGLYPHIDAE FAM. N. AND NEW TAXA OF ACARIDAE AND ANOETIDAE (ACARI: ACARIDA)

By

S. MAHUNKA

(Received 15 March, 1977)

A study of hypopi belonging in the superfamily Acaroidea. From the Hortobágy National Park, Hungary, a new genus and two new species (*Hortacarus simplisetosus* gen. et sp. n., and *Myianoetus szaboi* sp. n.); from Cuba two new Anoetid species (*Histiostoma cubanum* and *H. meszarosorum* sp. n.); from the Papuan Region a new Acaridoid family (Schizoglyphidae fam. n.), two new genera and 9 new species (*Schizoglyphus biroi* gen. et sp. n., *Cosmoglyphus sicafer* sp. n., *Caloglyphus conus* sp. n., *C. baloghi* sp. n., *Histiostoma lineosculpturatum*, *H. reticulatissimum*, *H. reticulofoveolatum*, *H. szentivanyi* spp. n., and *Pteranoetus kaszabi* gen. et sp. n.), and from Viet-Nam a new species (*Anoetoglyphus langi* sp. n.) are given.

A better understanding of the taxa of the superfamily of Acaridoidea, an endeavour becoming quite intensive recently, may, for the time being, realize only discoveries and descriptions of the hypopus stage of development of certain Acari found on insects. During my research, I primarily concentrated on the extremely rich beetle collection housed in the Hungarian Natural History Museum, Budapest. My work was much supported by various specialists here, but primarily by DR. Z. KASZAB, Director General of this Museum, head of the Coleoptera Collection. In addition, I received extensive help and material from foreign specialists too. For all the help and the submitted material, I should like to thank everyone also at this place.

For the present occasion, I elaborated material deriving from Hungary, Cuba, from the Papuan Region, and from Viet-Nam. Owing to the great geographical and thus also zoogeographical distances, I discuss the materials separately.

### I. HORTACARUS GEN. N., AND TWO NEW SPECIES FROM THE HORTOBÁGY NATIONAL PARK

In order to explore the natural gene bank of the Hortobágy National Park, comprehensive collectings have been made over a period of several years. To collect members of the superfamily Acaridoidea, singling and extracting were used, but another, already described method (MAHUNKA, 1975) was also applied extensively, i.e. the examination of the debris retained by the soil traps.



The results of investigations will be published in a comprehensive work, but the description of new taxa is published separately, owing to unforeseen postponements in the publication of the comprehensive work. At this time I am describing a new genus in the family Acaridae and a new species in the same family, together with a new species belonging in the family Anoetidae.

### **Hortacarus** gen. n.

**Diagnosis** (Hypopus). Body squat, propodosoma wide, tricuspidate. Gnathosoma present. Epimeres closed, apodemes thin, yet all discernible. Epimeres 1, 3 and 4 bearing suckers. Adhering plate developed as normal. Legs bearing no lanceolate hairs, hairs generally short, some extraordinarily thickened. Legs I and II with hairs  $l''G$  and especially  $l''T$  very thick. Legs III and IV without end hairs, hairs thickened, spiniform.

**Type-species:** *Hortacarus simplisetosus* sp. n.

**Remarks.** To relegate the new genus to any known alliance is difficult. There are only a few genera whose lanceolate hairs on leg IV are modified into spines, and in which the hairs are thin and simple on legs I and II. From several respects, *Terglyphus* SAMSINAK, 1965, is similar, but its gnathosoma is missing, while the legs and their spines in the genus *Machadoglyphus* MAHUNKA, 1963, are different in shape.

### **Hortacarus simplisetosus** sp. n.

**Measurements.** Length: 143—151  $\mu$ , breadth: 102—110  $\mu$ .

**Dorsal side** (Fig. 1:A). Propodosoma wide, medially obtusely, laterally weakly yet acuminate extended. Dorsosejugal region wide, with heavy sculpture. Notogastral hairs  $c_1$ ,  $c_2$  and  $d_1$  long, much longer than tibia, bent, thin. All other hairs minute.

**Gnathosoma:** Infracapitulum narrow, palpi scarcely separated.

**Ventral side** (Fig. 1:C). Apodemes thin, ap. sa. shorter than ap. 2. Second epimeres angulate. Third epimeres not touching each other in middle. Epimeres 1 and 3 with 1 smaller, 4 with 1 larger sucker present. Adhering plate with  $Ds$  discs weakly developed, scarcely distinguishable.

**Legs.** Leg I (Fig. 1:B) with very large adhering hair, broad, cordiform. Leg II (Fig. 1:D) with narrower, phylliform adhering hair. Leg I with solenidia  $\omega_1$ ,  $\omega_2$  and  $\varepsilon$  present in a cluster at basis of tarsus. Legs III and IV (Fig. 1:E, F) with majority of hairs spiniformly thickened.

**Material examined:** Holotypus (178-HA-77): Hungary, Újszentmargita (Hortobágy Nat. Park), debris in soil trap. 1975. X. 5. leg.: Mrs. HÁMORI. 3 ex. paratypes: collected with holotype. Holotype and 2 paratypes (178-PA-77) deposited in HHNM,\* 1 paratype in MHNG.\*\*

\* Hungarian Natural History Museum, Budapest.

\*\* Museum d'Histoire Naturelle, Genève.

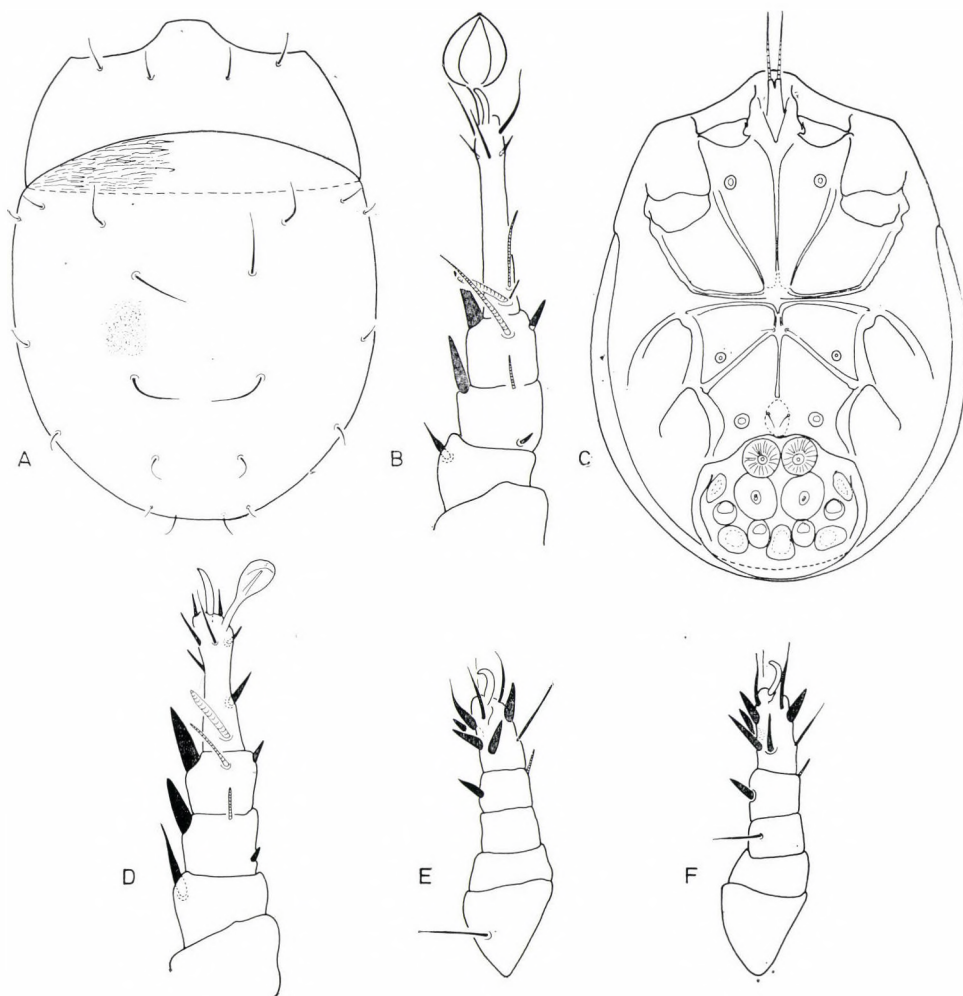


Fig. 1. *Hortacarus simplisetosus* sp. n. — A = dorsal side, B = leg I, C = ventral side, D = leg II, E = leg III, F = leg IV

**Remarks.** According to the generic description, the new species cannot be identified with any known species.

***Myianoetus szabo* sp. n.**

**Measurements.** Length: 232  $\mu$ , breadth: 160  $\mu$ .

**Habitus.** Propodosoma anteriorly flatly, hysterosoma posteriorly convexly rounded, body thus obovoid in outline.



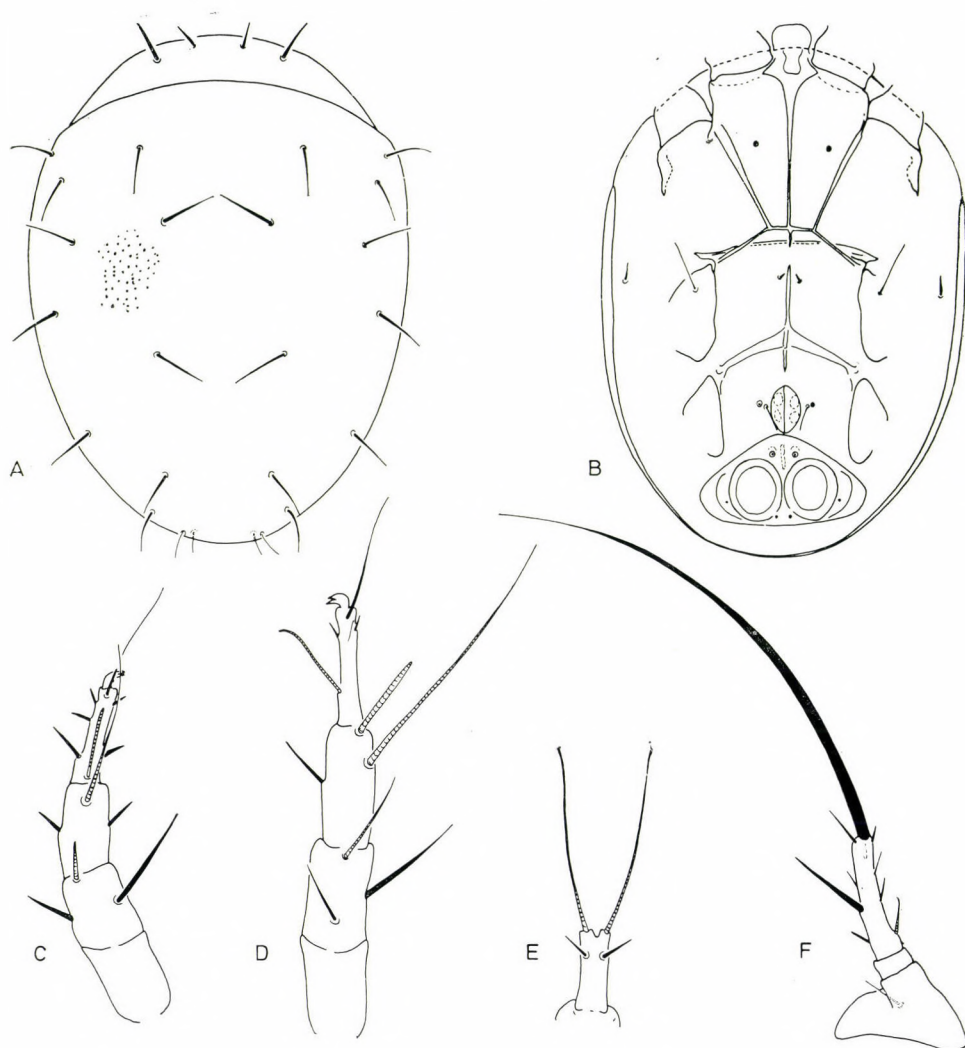


Fig. 2. *Myianoetus szabo* sp. n. — A = dorsal side, B = ventral side, C = leg II, D = leg I, E = gnathosoma, F = leg IV

**Dorsal side** (Fig. 2:A). Propodosoma bearing some irregular foveolae smaller than insertion points of hairs. Dorsosejugal region smooth. Hysterosoma with sparsely set, minute foveolae. Inner hairs of propodosoma much shorter than outer ones. Hysterosomatic hairs  $c_1$ ,  $c_2$  and  $e_1$  somewhat longer than others, all aciculaform, mostly straight.

**Ventral side** (Fig. 2:B). Gnathosoma (Fig. 2:E) with long and straight infracapitulum. Solenidia also long. Apodemes (except sejugal one) long, ap. sp. ending far from sejugal; ap. 4 extraordinarily thick. Epimeres 1 and 3 with well discernible insertion points. Adhering plate small, bearing

a large sucker, anteriorly of latter with two minute hairs, posteriorly with 2 small denticles.

**Legs.** Legs I and II (Fig. 2:D, C) with heavily punctate surface, leg I carrying a long, thin adhering hair. Legs I and II with hair  $l''G$  of genu very long, much longer than  $l'G$ . Shape and chaetotaxy of legs III and IV as shown in Fig. 2:F.

**Material examined:** Holotypus (179-HA-77): Hungary, Kócs (HO-12) (Hortobágy Nat. Park), 24. IV. 1974. leg.: MAHUNKA, S. Holotype deposited in the HNHM.

The new species is dedicated to LÁSZLÓ SZABÓ, ornithologist, member of the Directorate of the Hortobágy National Park, who extensively helped my work in the Park.

**Remarks.** The new species may be best characterized by the long adhering hair of leg I, the propodosoma hairs of various lengths, and by the great difference between hairs  $l''G$  and  $l'G$  of genu of legs I and II. This combination of features is not found in the known species (MAHUNKA, 1972).

## II. TWO NEW ANOETID SPECIES FROM CUBA

While staying in Cuba, Dr. É. and Z. MÉSZÁROS (Budapest) have collected many insects for the Hungarian Natural History Museum, primarily beetles. A part of this material was examined and some specimens were found to carry hypopi of Acarid and Anoetid species. Two of them are described hereunder.

### *Histiostoma cubanum* sp. n.

**Measurements.** Length: 115—132  $\mu$ , breadth: 75—86  $\mu$ .

**Habitus.** End of body elongated, lingulate. Propodosoma broadly rounded, thus body outline approximately obovoid.

**Dorsal side** (Fig. 3:A). A long peritrema decurrent parallel with prodorsal margin. Dorsejugal region wide with a fine sculpture. Dorsal hairs long, pointing forward, arcuate yet robust. Hairs  $c_1$ — $c_3$  standing far from dorsejugal suture. Hairs  $c_1$  and  $d_1$  equal in length,  $e_1$  slightly,  $f_1$  much shorter.

**Gnathosoma.** Oblong, palpi scarcely separated. Solenidia extraordinarily long.

**Ventral side** (Fig. 3:C). Apodemes of anterior sternal plate long, apodemes 2 reaching arc of sejugal apodeme, ap. sa. ending somewhat in front of it. Apodemes 3 of posterior sternal plate angular, subtending nearly a right angle, ap. sp. attenuating when reaching sejugal apodemes.

**Legs.** Leg I (Fig. 3:B) significantly thicker than leg II (Fig. 3:F), femur and genu also short. Solenidium  $\omega_1$  shortest,  $\varepsilon$  longer than  $\varphi_2$ . On leg II,  $\omega_1$  longer than  $\varphi_1$ . Terminal hairs of legs III and IV (Fig. 3:E, D) thick.



**Material examined:** Holotypus (182-HA-77): Cuba, La Habana, from *Acanthoderes circumflexa* DUVAL (Cerambycidae), V. 1975; leg. É. et Z. MÉSZÁROS. 4 ex. paratypes: collected together with holotype. Holotype and 3 paratypes (182-PA-77) in the HNHM; 1 paratype in the MHNG.

**Remarks.** The new species is characterized by its general habitus, the striking dorsal hairs and the shape of apodemes 3. The lingulate elongation of the body end was so far not known in the species of the group.

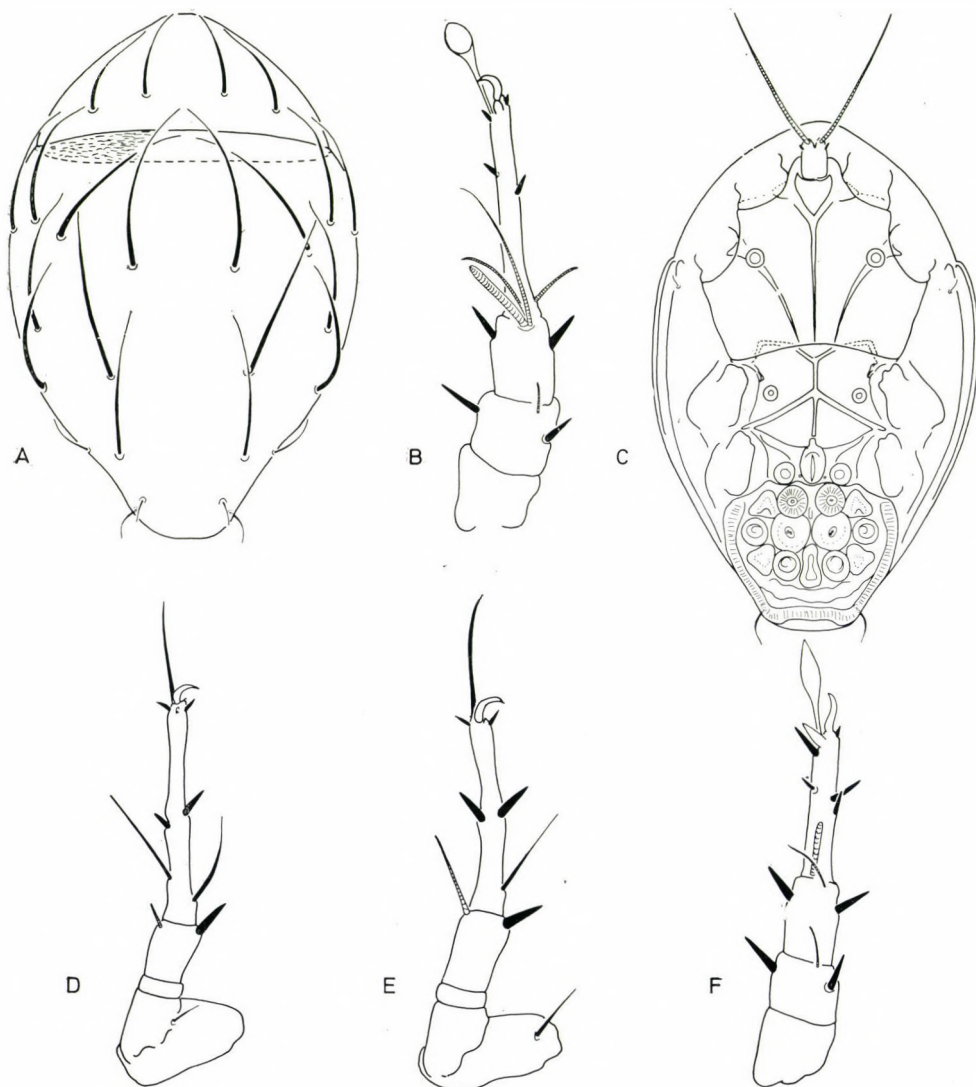


Fig. 3. *Histiotoma cubanum* sp. n. — A = dorsal side, B = leg I, C = ventral side, D = leg II, E = leg III, F = leg IV

***Histiostoma meszarosorum* sp. n.**

**Measurements.** Length: 129–140  $\mu$ , breadth: 88–95  $\mu$

**Habitus.** Body approximately ovoid in outline, equally rounded anteriorly and posteriorly.

**Dorsal side** (Fig. 4:A). Prodorsal and notogastral surfaces, excepting a central band, with very deep and occasionally fused foveolae of various

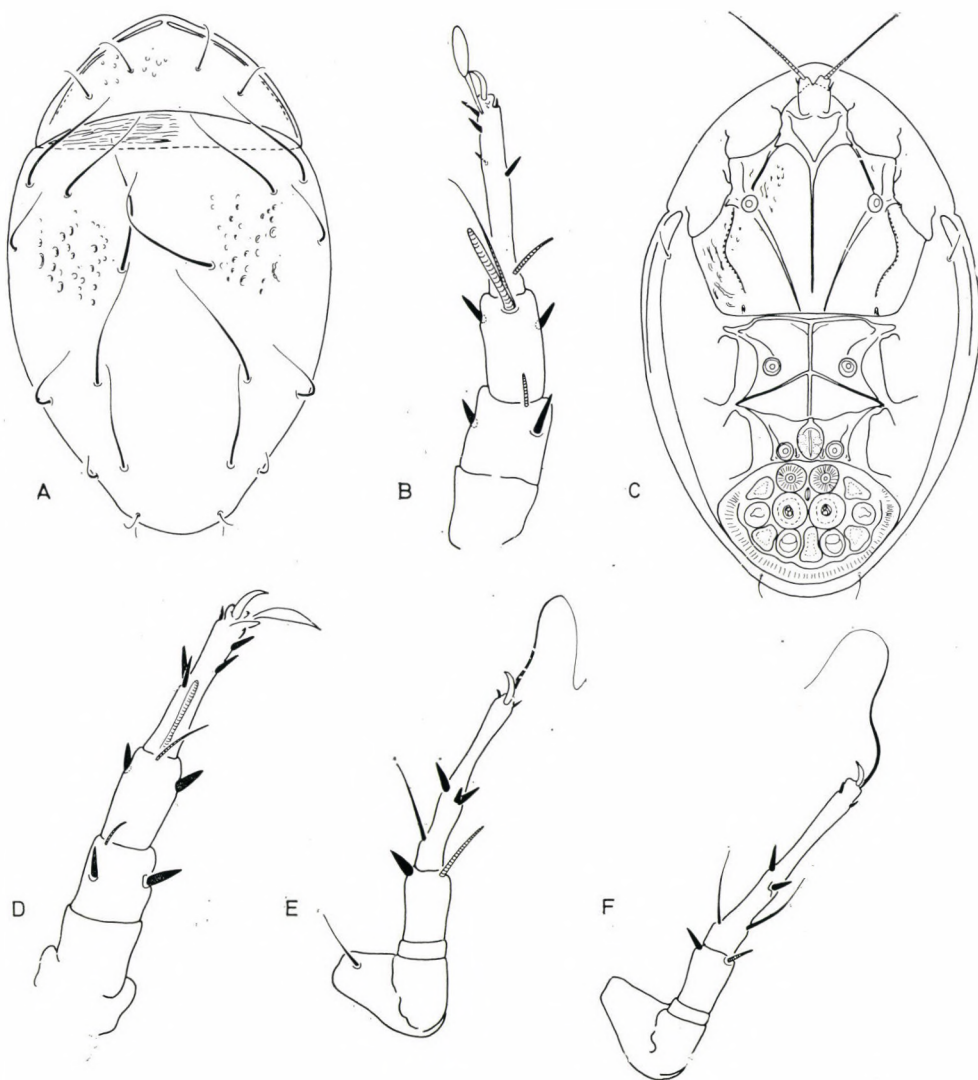


Fig. 4. *Histiostoma meszarosorum* sp. n. — A = dorsal side, B = leg I, C = ventral side, D = leg IV, E = leg III, F = leg II



sizes. Most dorsal hairs long, thin, proclinate. Hairs  $c_1$ ,  $d_1$  and  $e_1$  long,  $f_1$  and  $h_1$  short.

**Ventral side** (Fig. 4:C). Surface of epimeres 1 and 2 with a sculpture of long striations and longitudinally decurrent irregular depressions; from base of apodemes one long scratch each. Apodemes also long, ap. sa. ending freely, ap. 2 attenuating when reaching transversal section of sejugal apodemes. These latter with a sharply delimited, reclinate tooth each. Apodemes 3 fused into a straight transversal apodeme, on posterior sternal plate apodemes forming a close mesh. Epimeres 1, 3 and 4 bearing a well-developed sucker each. Adhering plate of normal size and development.

**Legs.** Adhering hair of leg I (Fig. 4:B) shaped like a spoon, that of leg II (Fig. 4:D) phylliform. Surface of leg joints with sculpture. Solenidium  $\omega_1$  of leg I much thinner and shorter than  $\varphi_2$ . End hairs of legs III and IV thin and long (Figs. 4:E, F).

**Material examined:** Holotypus (183-HA-77): Cuba, La Habana, from *Acanthoderes circumflexa* DUVAL (Cerambycidae), V. 1975; leg. É. et Z. MÉSZÁROS; 4 paratypes collected at the same locality together with holotype. Holotype and 3 paratypes (183-PA-77) in the HNHN, 1 paratype in the MHNG.

I dedicate the new species to its collectors, ÉVA and ZOLTÁN MÉSZÁROS (Research Institute for Plant Protection, Budapest), friends of long standing.

**Remarks.** The dorsal and ventral surface sculptures, those of epimeres as well as of legs I and II readily separate the new species from its allies.

### III. SCHIZOGLYPHIDAE FAM. N., AND OTHER DATA TO THE KNOWLEDGE OF THE ACARIDOID FAUNA OF THE PAPUAN REGION

The Acaridoid fauna of the Papuan Region is rather inadequately known, and papers were published only in the last years containing the description of a few new species. Yet the variety and richness of the fauna are clearly demonstrated by the fact that all species deriving from that region proved to be new to science, indeed, that a number of extraordinary higher taxa, unrelated to the others or suggesting the possibilities of very interesting new relationships, have also been found.

My present contribution derives partly from materials collected by Hungarian expeditions and partly from the Coleoptera Collection (HNHN).

It was especially interesting to find specimens of a hypopus which could not be relegated into any known family without disturbing the principle of homogeneity, accordingly the erection of a new family and genus was deemed necessary. Apparently this new form is the most primitive representative of the known hypopi belonging in the superfamily.

**Schizoglyphidae fam. n.**

**D i a g n o s i s.** (Deutonymph). Genital primordia with 3 pairs of papillae. Beside slit, 4 pairs of reduced, punctiform suckers (?) present in a longitudinal row. Infracapitulum of gnathosoma with a short spine, palpus 3-jointed, first joint bearing a hair, last joint carrying 1 solenidium and 3 short, spiniform setae. Adhering plate modified.

Type-genus: *Schizoglyphus* gen. n.

**R e m a r k s.** All the known hypopi belonging in the superfamily of Acaridoidea follow a rather uniform basic principle. The above diagnosis includes features which widely differ from all known types. Especially the construction of the gnathosoma and the margins of the genital primordia are strikingly primitive, indicating new data to the origin of the entire group. There can be no doubt that this is the most primitive form now known.

**Schizoglyphus gen. n.**

**D i a g n o s i s** (Hypopus). The features given in the family description characterize the genus.

Type-species: *Schizoglyphus biroi* sp. n.

**R e m a r k s.** On the basis of the above description, the new species may be readily separated from all known hypopi of the superfamily.

**Schizoglyphus biroi sp. n.**

**M e a s u r e m e n t s.** Length: 213—226  $\mu$ , breadth: 127—135  $\mu$ .

**D o r s a l s i d e** (Fig. 5:A). Propodosoma antero-medially somewhat elongate, apex of rostrum obtuse. Surface of central basal part with foveolae of increasing sizes towards margin. A similar sculpture present on surface of hysterosoma. All three pairs of prodorsal hairs emitted in anterior part of body, minute like main hairs of hysterosoma. Hair  $h_1$  long, all others small.

**V e n t r a l s i d e** (Fig. 5:C). Apodemes 2, 3 and 4 thick, ap. sa. thin, not fused with apodemes 2. Sejugal apodemes not reaching each other medially, while epimeres 3 and 4 fused in middle, yet apodemes 3 not reaching each other medially; ap. sp. very short, scarcely distinguishable. Epimeres 1 and 3 with one, epimere 4 with two, short hairs. Beside primordia of genital opening, 4 minute insertion points (perhaps minute suckers) present. Adhering plate very large, filling surface behind legs IV, with 2 pairs of large suckers on  $D_1$  and  $D_2$ , structure of  $D_1$  granulated (!). Surface of adhering plate also with a crescent-shaped transversal field, and anteriorly a distinct irregular field with 2 rounded granulae each, hardly discernible, like those on middle of discs.



*Gnathosoma* (Fig. 5:E). Infracapitulum small, wide, antero-medially with one small spine present. Palpus long, consisting of readily distinguishable 3 joints; joint 2 laterally with one, last joint dorsally (beside solenidium), ventrally and laterally with 3 short hairs.

*Legs*. All leg joints short, robust. Legs I and II (Fig. 5:B, F) with very strong claws, those of legs III and IV (Fig. 5:D, G) thinner. Legs I and II laterally bearing 2, ventrally 1, phylliform hairs. All other hairs thickened, spiniform. Tarsi of legs III and IV (Figs. 5:D, G) with 1 short spiniform hair each, rest of hairs phylliform.

*Material examined*: Holotypus (184-HA-77): "Nouv. Guinée, de Geelvink, Raffray Maindron 1878", ex *Tagalus tibialis* KASZAB (Coleoptera: Tenebrionidae). 1 paratype collected at same place. Both holotype and paratype deposited in the HNHM.

I dedicate the new species to LAJOS BIRÓ, explorer of New Guinea, spending 8 excruciating years of his life to the exploration of this area, collecting innumerable species new to science.

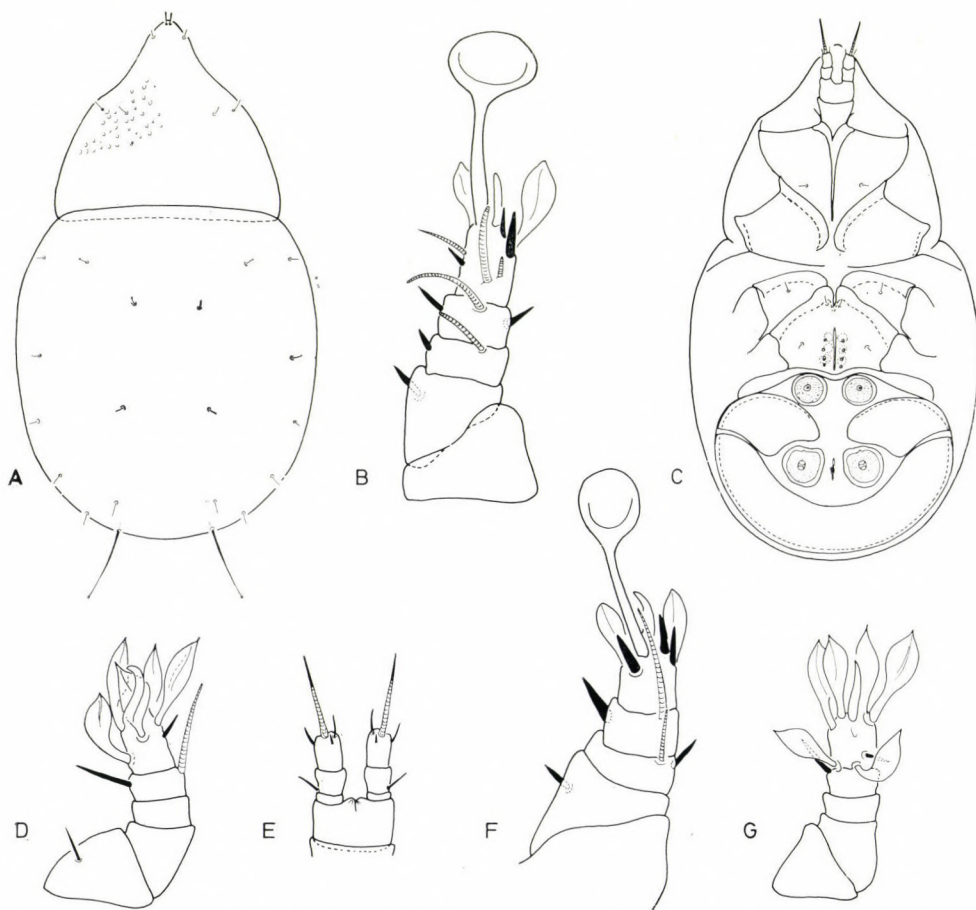


Fig. 5. *Schizoglyphus biroi* sp. n. — A = dorsal side, B = leg I, C = ventral side, D = leg III, E = gnathosoma, F = leg II, G = leg IV

**Remarks.** The new species cannot be related to any of the known species.

***Cosmoglyphus sicafer* sp. n.**

**Measurements.** Length: 271—295  $\mu$ , breadth: 197—213  $\mu$ .

**Habitus.** Body regular ovoid excepting undulate anterior margin.

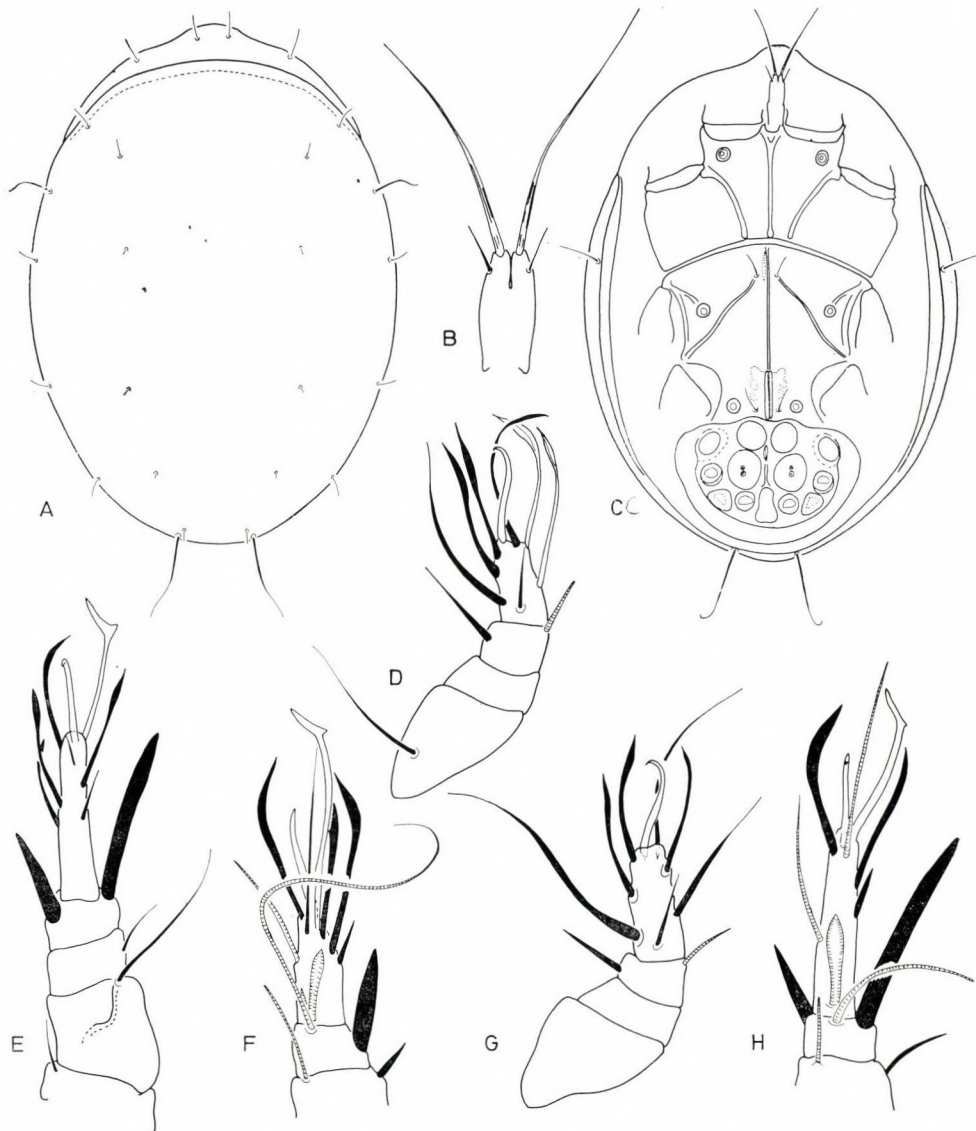


Fig. 6. *Cosmoglyphus sicafer* sp. n. — A = dorsal side, B = gnathosoma, C = ventral side. D = leg III, E = leg I from ventral side, F = leg I, G = leg IV, H = leg II



**Dorsal side** (Fig. 6:A). Propodosoma short, broad, medially somewhat elevated. Inner propodosomal hairs originating closer to each other than distance between inner and outer hairs. Outer hairs longer. Surface of hysterosoma finely punctate. Hairs there of various lengths, hairs  $h_1$  longer than others.

**Gnathosoma** (Fig. 6:B). Infracapitulum small, medially broadened, barrel-shaped.

**Ventral side** (Fig. 6:C). Epimeres 1 much narrower and longer than empires 2. Apodemes ap. sa. and ap. 2 equal in length, distally thickened. Posterior sternal plate with apodemes thin, ap. sp. well discernible throughout its entire length. Epimeres 1, 3 and 4 bearing suckers. Primordium of genital opening perceptible as a narrow slit. Adhering plate large, occupying entire surface behind legs IV, all *D* and *Ds* discs clearly recognizable.

**Legs**. Claws of all legs long, thin. Legs I and II (Figs. 6:E, F, H) with lanceolate hairs. Adhering hair long, its head small, similar on both legs. Both legs bearing spiniform hairs, those especially on tibia of leg II large. Hair  $l''T$  of leg II extraordinarily long, longer than tarsus. Legs III and IV (Figs. 6:D, G) with lanceolate hairs.

**Material examined**: Holotypus (185-HA-77): New Guinea, Papua, Kiunga, Fly River, ex. *Pseudophthora laeana* KASZAB (Coleoptera: Tenebrionidae), 14. VII. 1974. leg. W. W. BRANDT. 1 paratype: collected with the holotype. Both types deposited in the HNHM.

**Remarks**. On the basis of its habitus and chaetotaxy, the new species might be placed in the genus *Cosmoglyphus* OUDEMANS, 1932, but it differs from all known species in this genus by its huge adhering plate occupying surface behind leg IV. Another distinguishing feature is the large dagger-like hair  $l''T$  on leg II.

### ***Caloglyphus baloghi* sp. n.**

**Measurements**. Length: 221—246  $\mu$ , breadth: 168—185  $\mu$ .

**Habitus**. Propodosoma in superior view hidden by a very large, approximately elliptical hysterosoma, only angulate anterior margin free. Anterior and posterior margins of hysterosoma rounded by the same arc.

**Dorsal side** (Fig. 7:A). Prodorsum anteriorly produced into an apex, then weakly concave, laterally with a rounded angle. Surface of notogaster densely punctate, inner hairs minute, marginal ones somewhat longer,  $h_1$  especially long.

**Gnathosoma**. Infracapitulum somewhat barrel-shaped. Palpi well separated.

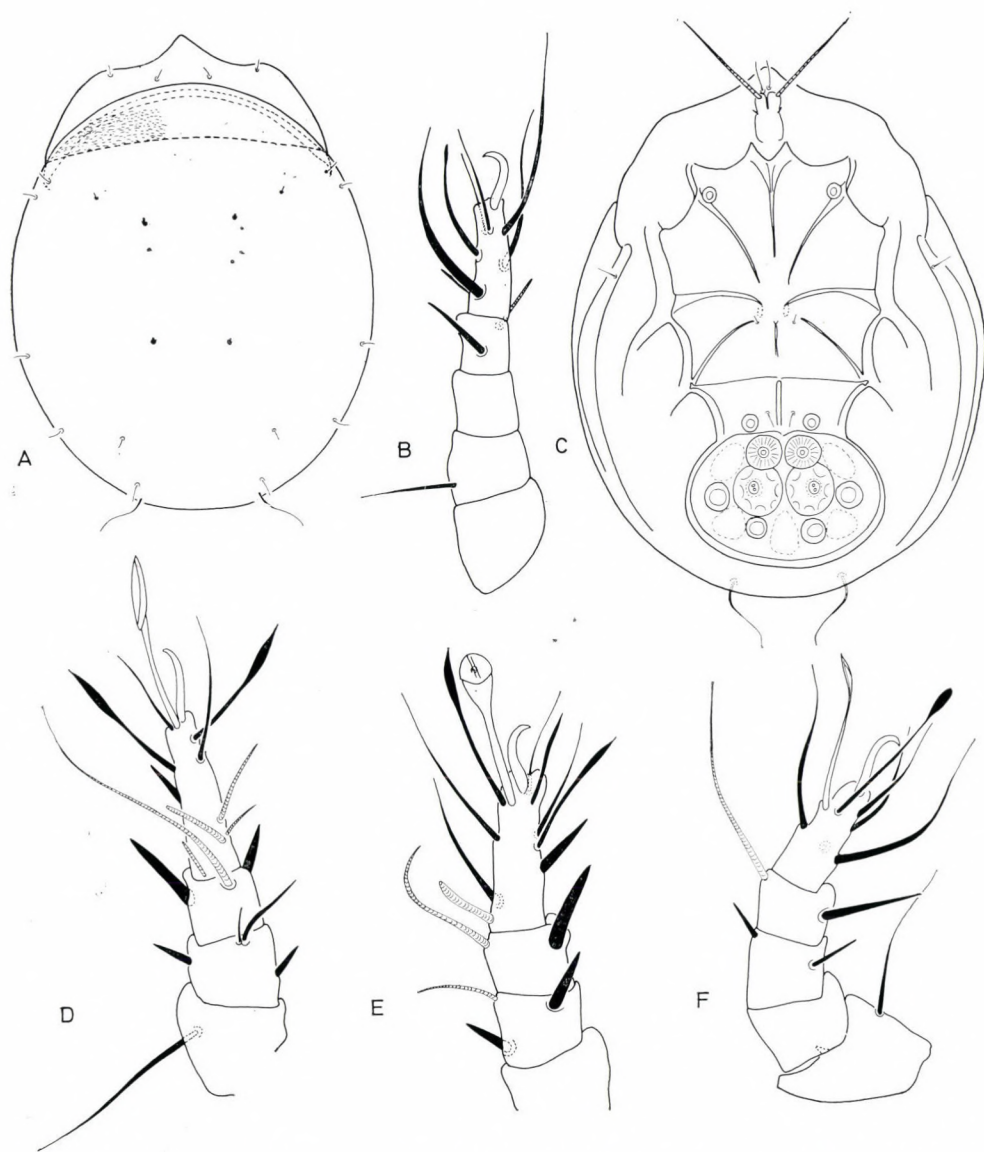


Fig. 7. *Caloglyphus baloghi* sp. n. — A = dorsal side, B = leg IV, C = ventral side, D = leg I, E = leg II, F = leg III

**Ventral side** (Fig. 7:C). Epimeres open, most apodemes ending free, with a thin line recognizable only between ap. 3 and ap. 4; ap. sp. represented only fragmentally. Epimeres 1, 3 and 4 with suckers. *Ds* discs of adhering plate not or scarcely distinguishable.

**Legs.** Genu of leg I (Fig. 7:D) with considerable difference between solenidia  $\delta_1$  and  $\delta_2$ ;  $\omega_3$  originating close to base of tarsus, far from  $\omega_1$  and  $\varepsilon$ .



Solenidium  $\varphi_1$  of leg II (Fig. 7:E) comparatively small. Lanceolate hairs of tarsi on legs III and IV (Fig. 7:F, B), similarly to those on legs II and III, not broadening.

**Material examined:** Holotypus (186-HA-77): New Guinea, Mt. Wilhelm, 2500 m, leg. J. BALOGH; 3 paratypes: collected together with holotype. Holotype and 2 paratypes (186-PA-77) deposited in the HHNM, 1 paratype in the MHNG.

I dedicate the new species, in gratefulness and esteem, to Prof. DR. J. BALOGH, leader of the Hungarian Soil Zoological Expedition.

**Remarks.** Its relegation as to genus is difficult, since it appears to be related also to the following genera: *Acotyledon* KRAMER, 1877, *Schwiebea* OUDEMANS, 1916, and *Caloglyphus* BERLESE, 1923. Owing to its extraordinarily reduced apodemes and body shape, the new species can not be identified with any of the related species.

### ***Caloglyphus conus* sp. n.**

**Measurements.** Length: 201—205  $\mu$ , breadth: 123—128  $\mu$ .

**Habitus.** Approximately elongate ovoid in shape. Surface towards body margin more densely punctate. Dorsosejugal region with a sculpture of dense, minute striae.

**Dorsal side** (Fig. 8:A). Propodosoma elongate, conical, rostrum rounded, posteriorad weakly concave. Both pairs of dorsal hairs of prodorsum short, inner pair somewhat anteriorly to outer one. Notogastral hairs, excepting  $h_1$ , also short, latter long, arcuate.

**Ventral side** (Fig. 8:C). Infracapitulum of gnathosoma oblong, solenidia scarcely longer. Epimeres on anterior sternal plate open, ap. sa. short, ap. 2 arcuate, reaching sejugal apodemes as an attenuate line. Epimeres 3 of posterior sternal plate not touching each other. Epimeres 1, 3 and 4 with suckers. Adhering plate large, covering majority of posterior half of body surface.

**Legs.** Tarsi of legs I—IV (Fig. 8:B, D, E, F) with 5—6 lanceolate hairs. Solenidium  $\omega_2$  of tarsus of leg I hardly shorter than  $\omega_x$ , and originating directly at base of tarsus. Legs III and IV without long end hairs.

**Material examined:** Holotypus (192-HA-77): New Guinea, Bulolo, 24. August, 1956, ex. *Amargymus* sp. (Coleoptera: Tenebrionidae). 1 paratype: collected at same place. Holotype and paratype deposited in the HHNM.

**Remarks.** The peculiar shape of the propodosoma, the sculpture of the body and the chaetotaxy of the legs distinguish the new species from all other known congeners in the genus.

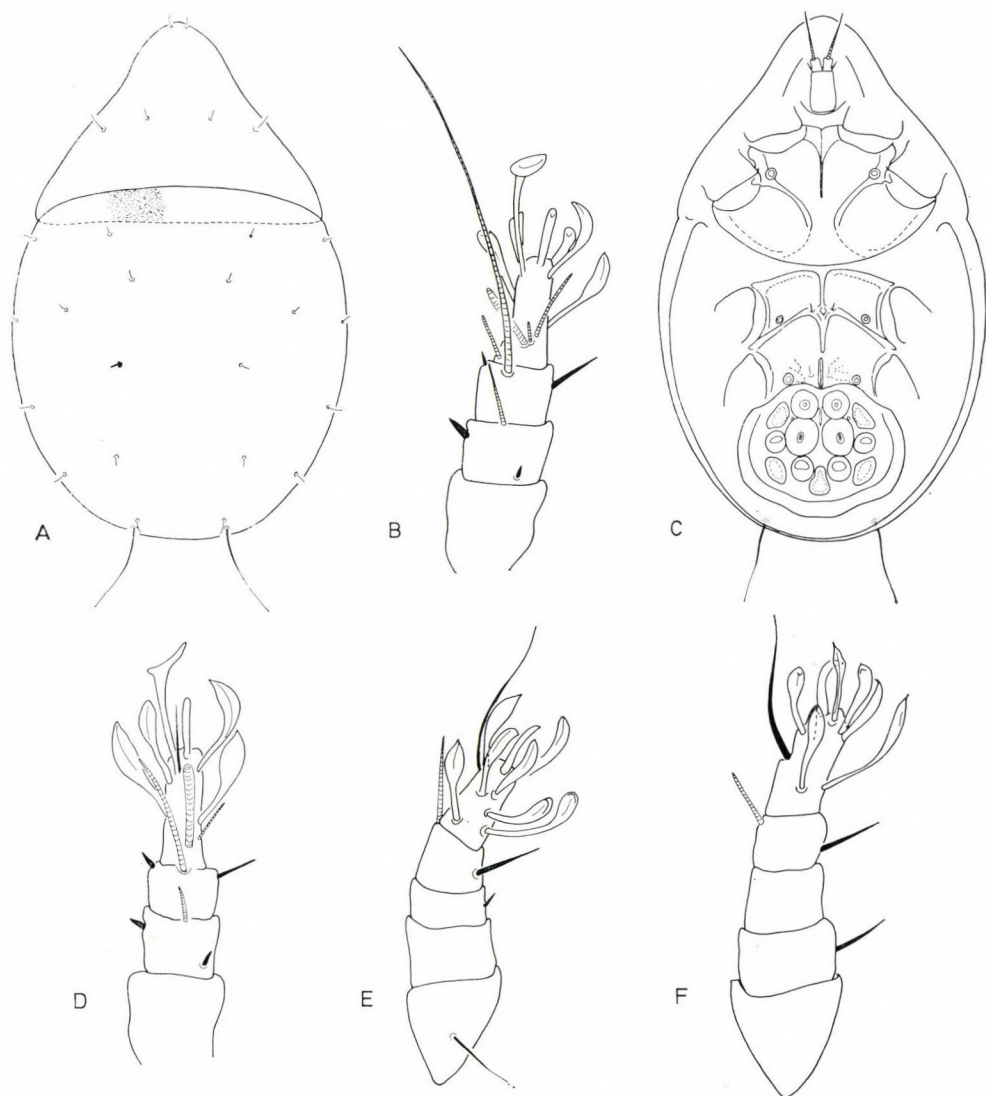


Fig. 8. *Caloglyphus conus* sp. n. — A = dorsal side, B = leg I, C = ventral side, D = leg II, E = leg III, F = leg IV

***Histiostoma lineosculpturatum* sp. n.**

**Measurements.** Length: 146  $\mu$ , breadth: 101  $\mu$ .

**Habitus.** Body ovoid, sides of propodosoma weakly convex, hysterosoma broadly rounded.

**Dorsal side** (Fig. 9:A). Prodorsum anteriorly and laterally with a few irregularly outlined impressions, foveolae; notogaster laterally with longi-



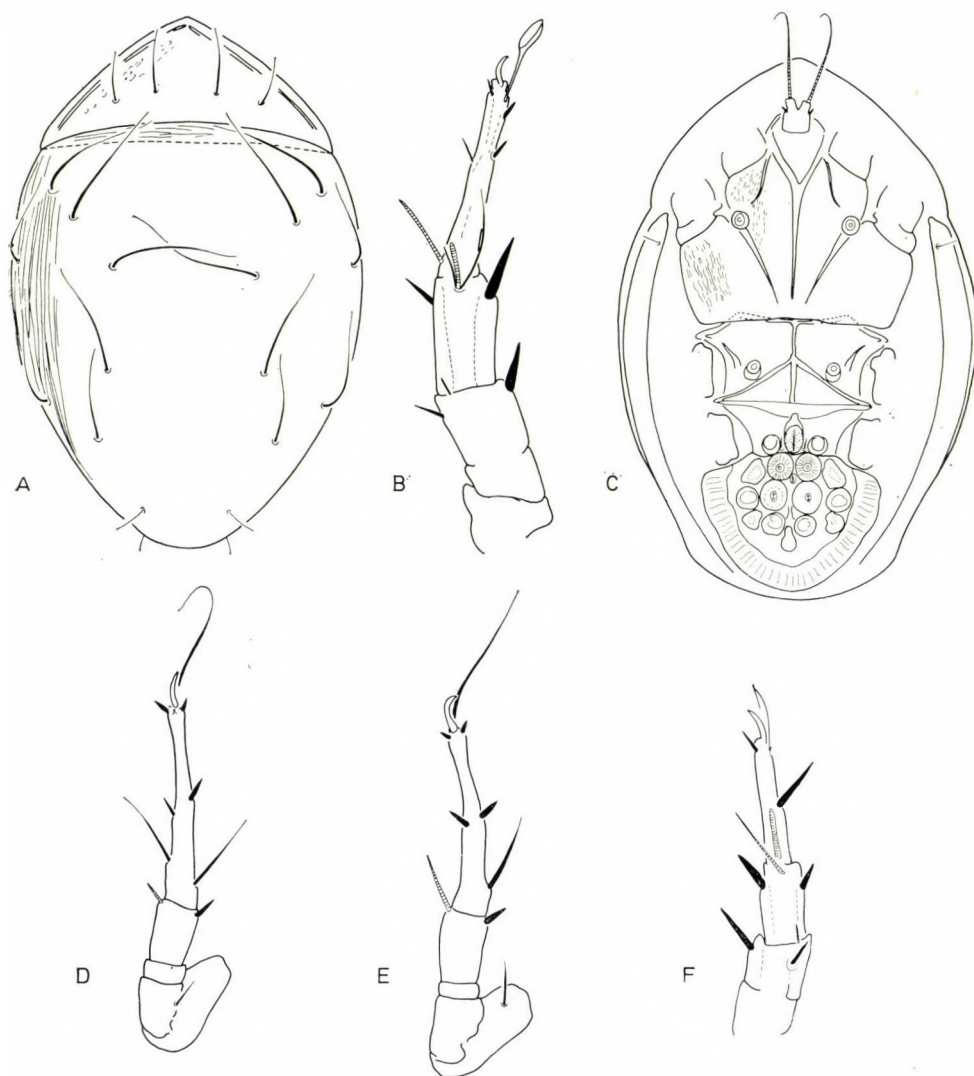


Fig. 9. *Histiostoma lineosculpturatum* sp. n. — A = dorsal side, B = leg I, C = ventral side, D = leg IV, E = leg III, F = leg II

tudinally decurrent parallel rugulosity. Body hairs long, majority proclinate, thin, arcuate. Hair  $e_1$  slightly,  $f_1$  much shorter, than other hairs.

**Gnathosoma.** Infracapitulum small, somewhat broader than long, with the short but well discernible palpi forming a square.

**Ventral side** (Fig. 9:C). Entire surface of epimeres 1 and 2 with longer or shorter striae. Both epimeres with one arcuate crease beginning from basis of leg and running posteriorad. Course of apodeme, and thus shape of epimeres, characteristic for the species-group. Transversal line of sejugal

apodemes not reached either by ap. sa. or ap. 2. A closed mesh formed by ap. 3, ap. sp., and ap. 4. Epimeres 1, 3 and 4 bearing a well-developed sucker each. Adhering plate comparatively small, discs *Ds* weakly developed.

**Legs.** Basal joints of legs I and II (Fig. 9:B, F) short and broad, tibia and tarsus elongate, but also these heavily sclerotized. Solenidia short, except  $\omega_1$  of leg I. Hairs *l'T* and *l'G* much longer and thicker than *l''T* and *l''G*. End hairs of legs III and IV (Fig. 9:E, D) thin.

**Material examined:** Holotypus (187-HA-77): New Britain, Gazelle Pen., Mt Sinewit, 5. XI. 1962, ex *Platolenes* sp. (Coleoptera: Tenebrionidae). Holotype deposited in the HHNM.

**Remarks.** The new species may be assigned to the *pini* species-group, owing to its characteristic dorsal hairs. But it is distinct by its peculiar sculpture on epimeres 1 and 2.

### ***Histiostoma reticulatissimum* sp. n.**

**Measurements.** Length: 150—164  $\mu$ , breadth: 97—107  $\mu$ .

**Habitus.** Propodosoma approximately triangular in outline. Hysterosoma only slightly and gradually narrowing posteriorad, posterior body margin flatly rounded.

**Dorsal side** (Fig. 10:A). Surface of propodosoma, excepting a basal band, with a polygonal sculpture consisting of larger fields. Narrow basal band smooth. Narrow dorsosejugal region indicated by some transversal rugae. Entire surface of notogaster ornamented by a heavy, polygonal sculpture, composed of extensive fields anteriorly and laterally, size of fields becoming smaller towards centre of body, at posterior part of body breaking up into individual foveolae around hairs  $f_1$ . Hairs of various sizes, hairs  $c_1$ — $c_3$ ,  $cp$ ,  $d_1$  minute, others longer, with declinate ends, tending to break off.

**Gnathosoma.** Infracapitulum approximately square in outline, palpi scarcely distinct. Solenidia thin, apically uncinately arcuate.

**Ventral side** (Fig. 10:C). Width of epimeres nearly same. Apodemes thin, short, very weakly developed especially on anterior sternal plate; ap. sa. and ap. 2 not even approximating arc of sejugal apodemes, latter much attenuating medially; ap. sp. long. Epimeres 1, 3 and 4 with well-developed suckers. Adhering plate large.

**Legs.** Adhering hair of leg I (Fig. 10:E) phylliform. Solenidia long,  $\varphi_1$  reaching almost apex of tarsus,  $\varepsilon$  longer than  $\varphi_2$  and not much thinner than latter. Leg II (Fig. 10:D) with  $\omega_1$  longer than  $\varphi_1$ . Size of claws equal on legs III and IV (Fig. 10:F), end hair of leg III (Fig. 10:B) arcuate and longer than that of leg IV.



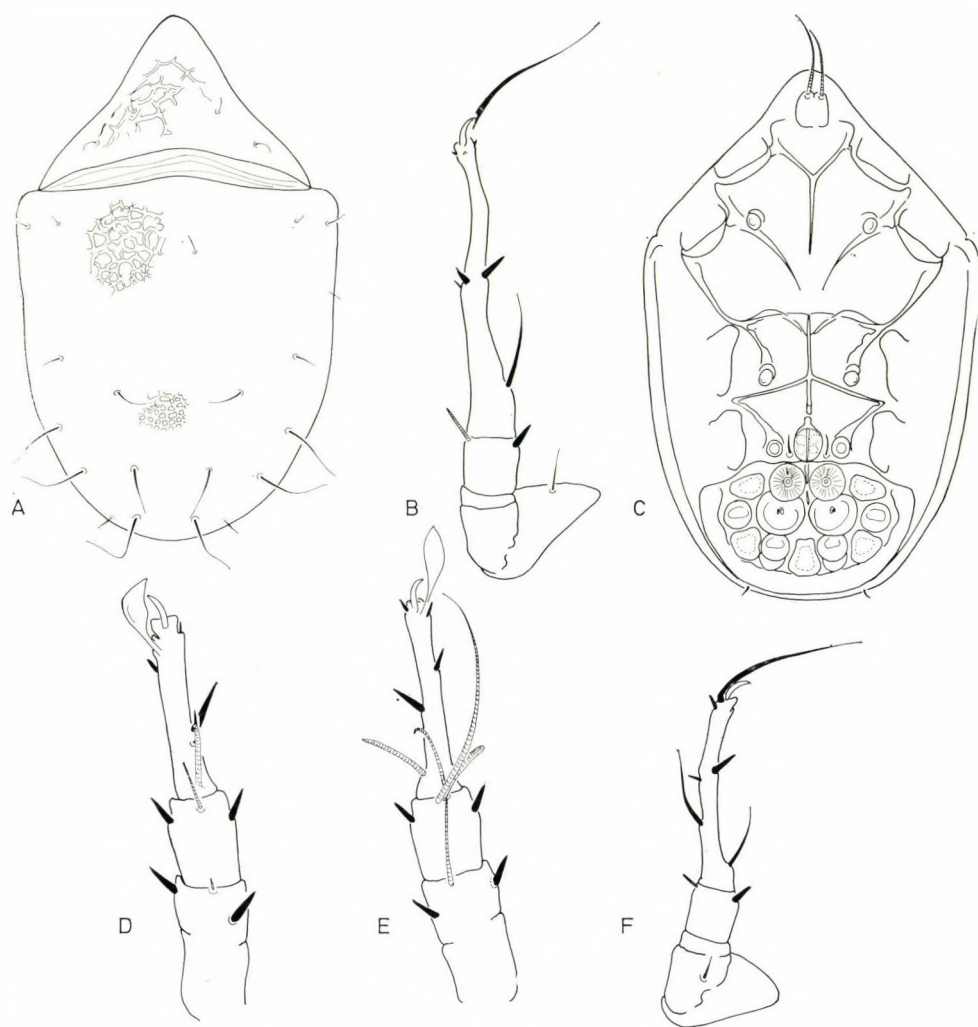


Fig. 10. *Histiostoma reticulatissimum* sp. n. — A = dorsal side, B = leg III, C = ventral side, D = leg II, E = leg I, F = leg IV

**Material examined:** Holotypus (188-HA-77): New Guinea, NE Wau, Morobe Distr., 1200 m, 2. XII. 1965, leg. J. BALOGH. 7 paratypes: collected at the same place. Holotype and 6 paratypes (188-PA-77) deposited in the HNHM, 1 paratype in the MHNG.

**Remarks.** The new species differs by its peculiar surface sculpture from all known species.

#### ***Histiostoma reticulofoveolatum* sp. n.**

**Measurements.** Length: 184—191  $\mu$ , breadth: 119—126  $\mu$ .

**Habitus.** Propodosoma anteriorly elongate, prodorsum approximately triangular, otherwise body obovoid.

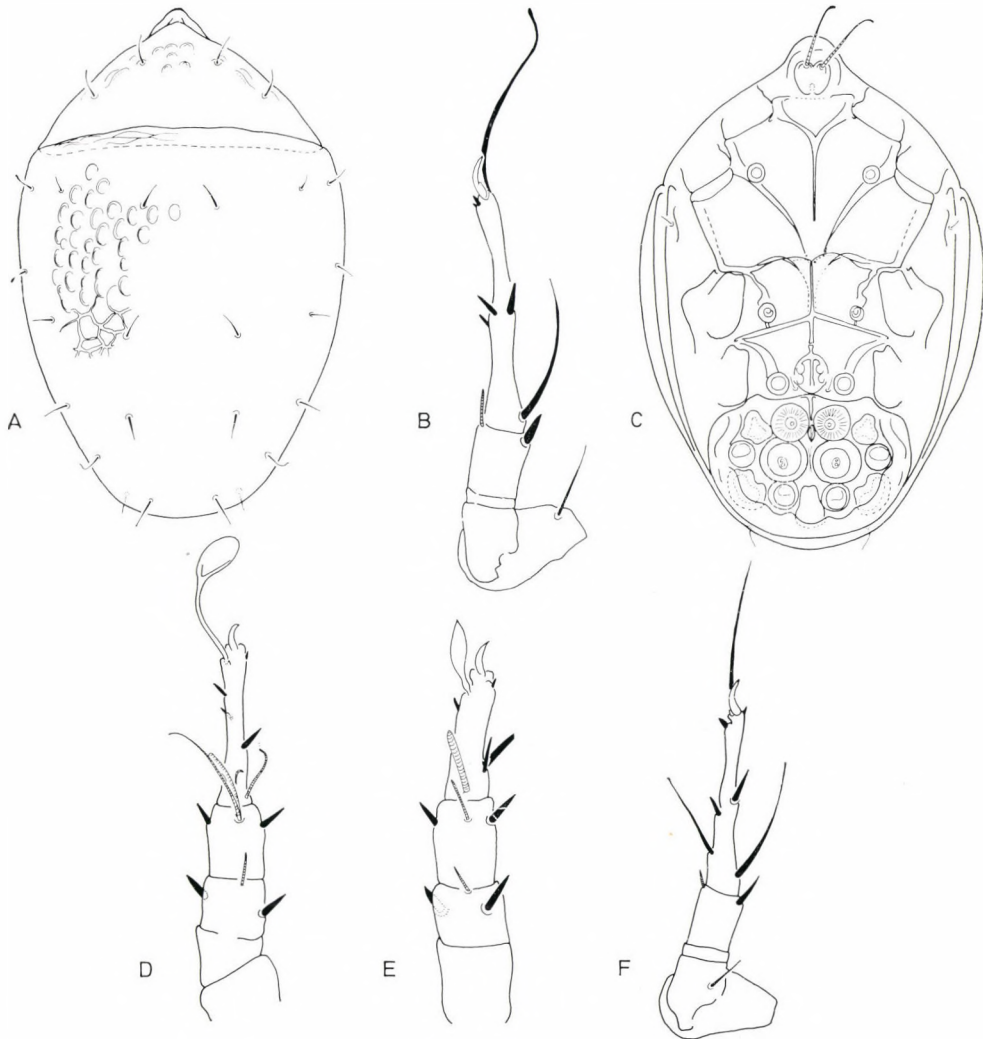


Fig. 11. *Histiostoma reticulofoveolatum* sp. n. — A = dorsal side, B = leg III, C = ventral side, D = leg I, E = leg II, F = leg IV

**Dorsal side** (Fig. 11:A). Prodorsum partly fused anteriorly with elongate propodosoma. Surface with irregularly dispersed smaller or larger foveolae, hairs set far from each other along lateral margin. Notogastral surface anteriorly with distinct, not confluent, very large foveolae posteriorad, from middle line fusing into a polygonal sculpture. 11 pairs of notogastral setae present, their length and thickness variable.

**Gnathosoma**. Infracapitulum small, palpi scarcely distinct. Sensilli short and thin.



**Ventral side** (Fig. 11:C). Apodemes thin, ap. sa. short, ending free, far from sejugal apodemes. Latter laterally thick, but medially scarcely discernible, ap. 2 and ap. sp. reaching it by as uncertain lines only, ap. sp. especially long. Epimeres 1, 3 and 4 bearing very large suckers. Adhering plate also very large, occupying entire body surface behind legs IV.

**Legs.** Joints of legs I and II (Fig. 11:D, E) stout. Group of solenidia on leg I with 4 members, also  $\varepsilon$  robust,  $\omega_1$  and  $\omega_2$  approximately of same length;  $\omega_1$  of leg II longer than  $\varphi_1$ . Tarsi of legs III and IV (Fig. 11:B, F) with a long end hair each.

**Material examined:** Holotypus (189-HA-77): New Guinea, Karubana, 1500 m. 11. XI. 1958. ex *Amargynus* cfr. *deformipes* KASZAB. 3 paratypes collected together with holotype. Holotype and 2 paratypes (189-PA-77) deposited in the HNHM, 1 paratype preserved in the collection of the MHNG.

**Remarks.** The unique surface sculpture of the new species separates it from all other allies.

### **Histiostoma szentivanyi sp. n.**

**Measurements.** Length: 156—180  $\mu$ , breadth: 98—111  $\mu$ .

**Habitus.** Propodosoma anteriorly elongate, approximately triangular in outline. Hysterosoma only slightly and gradually narrowing posteriorad, hind margin flatly rounded.

**Dorsal side** (Fig. 12:A). Surface of propodosoma only very weakly punctate, hysterosoma with variable, generally large, and irregularly spaced punctures. Inner propodosomal hairs standing somewhat anterior to outer ones, former hairs closer to each other than latter. Hysterosomatic hairs of anterior section (*c, d*) shorter and thinner than those standing more posteriorad.

**Ventral side** (Fig. 12:C). Width of epimeres 1 and 2 equal, short, open, because apodemes ending freely far in front of sejugal apodeme. Epimeres 3 also open, ap. sp. long, but attenuating before sejugal apodemes, their junction unequivocal. Epimeres 1, 3 and 4 carrying one large sucker each. Adhering plate of body end very large, occupying entire body surface behind legs IV.

**Legs.** Adhering hair of tarsus of leg I (Fig. 12:D) large and spoon-shaped. Group of solenidia consisting of 4 members,  $\varepsilon$  longer than  $\varphi_2$ ;  $\omega_1$  of leg II (Fig. 12:F) much bigger than  $\varphi_1$ . End hairs of legs III and IV (Fig. 12: B, E) long, robust, that of leg III longer than that of leg IV.

**Material examined:** Holotypus (190-HA-77): New Guinea, NE Nondugl., 2200—2700 m, 28. V. 1959, C. D. MICHENEV, ex *Amargynus* cfr. *capillatus* (Coleoptera: Tenebrionidae). 10 paratypes: collected together with holotype. Holotype and 9 paratypes (190-PA-77) deposited in the HNHM, 1 paratype in the MHNG.

The new species is dedicated to DR. J. J. SZENTIVÁNY, renown entomologist of the Pacific Islands.

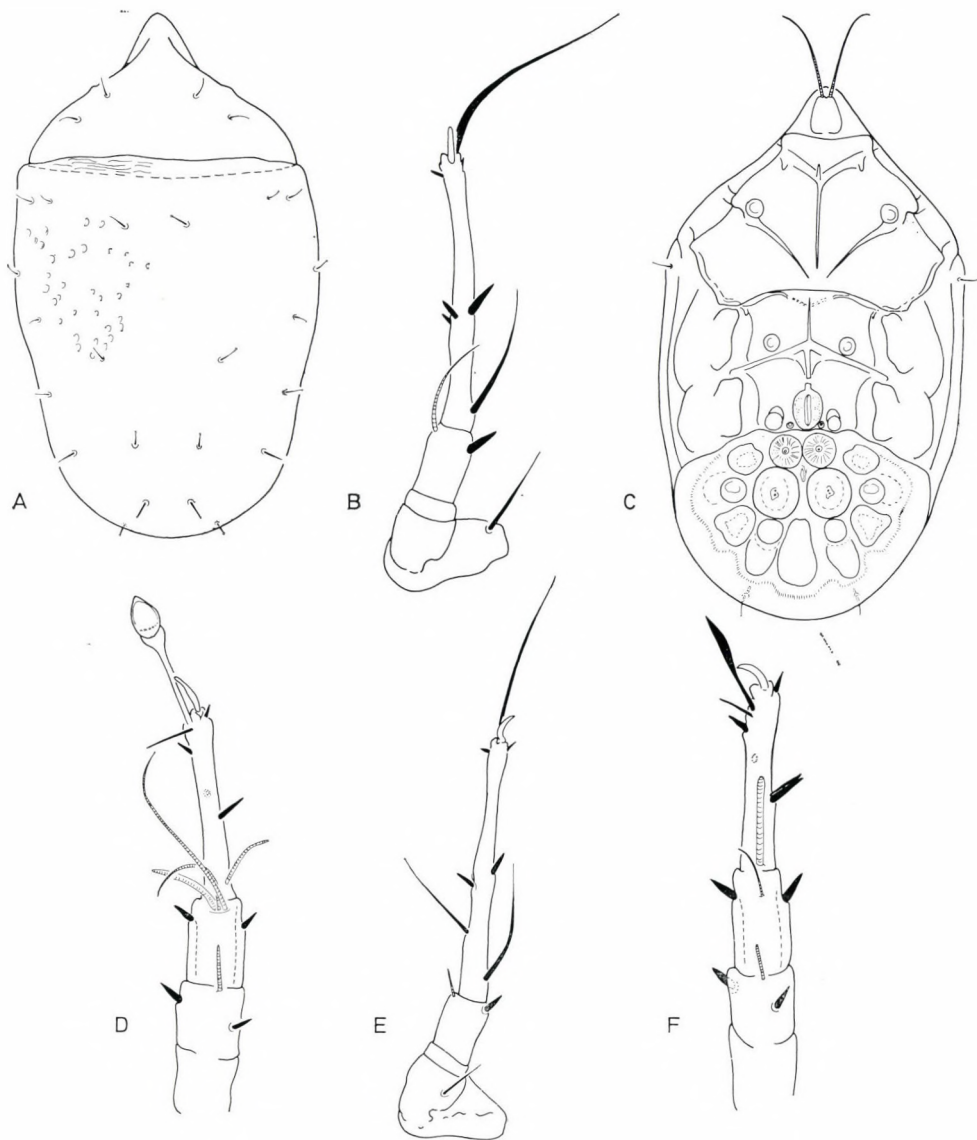


Fig. 12. *Histiostoma szentivanyi* sp. n. — A = dorsal side, B = leg III, C = ventral side, D = leg I, E = leg IV, F = leg II

**Remarks.** The new species belongs in the alliance *Histiostoma indicum* OUDEMANS, 1911, but it differs from all congeners by the shape of the sternal plates and apodemes, and by the position of the latter.



**Pteranoetus gen. n.**

**D i a g n o s i s** (Deutonymph). Anterior part of propodosoma enlarged, elongated and broadened, serving as basis of the largely trapeziform gnathosoma projecting between legs I. Its lobiform part (in a dorsal view) also partially covering gnathosoma. Intero-inferior margin of hysterosoma forming a wing-like plate, constituting a triangular apex beside propodosoma. All legs bearing normally developed claws, position of hairs and solenidia identical with that of other members of subfamily. Legs I, articulated unusually far from each other, owing to enlarged propodosoma.

**Type-species:** *Pteranoetus kaszabi* sp. n.

**R e m a r k s.** A similar configuration of the propodosoma in the family Anotidae was already known (*Kanoetus* SAMSINAK, 1966, *Xenanoetus* MAHUNKA, 1969). However, the new genus may not be brought into relation with either of them, not even on the subfamily level, since *Xenanoetus* belongs in the subfamily Myianoetinae, while *Kanoetus* apparently requires a new family, owing to its leg construction. The new genus seems to come close according to the configuration of its legs and some other characteristics, to the genus *Anoetus* DUJARDIN, 1849.

**Pteranoetus kaszabi sp. n.**

**M e a s u r e m e n t s.** Length: 213—221  $\mu$ , breadth: 120—126  $\mu$ .

**D o r s a l s i d e** (Fig. 13:A). Prodorsum anteriorly joining enlarged surface of propodosoma, medially transversal line obsolescent. Both pairs of its hairs originating far from each other and close to lateral margin. Labiform and enlarged portion of propodosoma, extending over gnathosoma, deeply emarginate medially, its surface with some rugae. Surface of hysterosoma with polygonal sculpture, obsolescent towards median line. 11 pairs of hairs present, those at posterior margin long, rigid, straight, those at anterior and antero-lateral parts short and arcuate.

**V e n t r a l s i d e** (Fig. 13:C). Apodemes thin, all well discernible, including lateral sejugal apodeme. Anterior sternal apodeme ending free, apodemes 2 though attenuating, reaching arc of sejugal apodeme, but posterior sternal apodeme ending immediately anterior to it. Epimeres 1, 3 and 4 with one large, well-developed sucker each. Margins of discs *Ds* with transversal striation.

**G n a t h o s o m a.** Infracapitulum large and broad, approximately trapeziform. Palpi scarcely distinct. Solenidia short and bent.

**L e g s.** Outer side of legs I and II (Fig. 13:E, D) thickened, hairs on this side thick, spiniform. Solenidium  $\omega_1$  of leg I long, thin, similar to  $\varepsilon$ ,  $\varphi_2$  somewhat shorter,  $\varphi_1$  much longer,  $\delta_1$  exceptionally long, thin. End hairs of legs III and IV (Fig. 13:B, F) long and thin.

**Material examined:** Holotypus (191-HA-77): New Guinea, NE, Nondugl., 2200—2700 m. C. D. MICHENEV. 4 paratypes (191-PA-77): collected together with the holotype. Holotype and 3 paratypes deposited in the HNHM, 1 paratype in the MHNG.

I dedicate the new species to DR. ZOLTÁN KASZAB, Director General, Hungarian Natural History Museum, Budapest.

**Remarks.** The generic diagnosis well separates the new species from all its relatives in the Anoetidae.

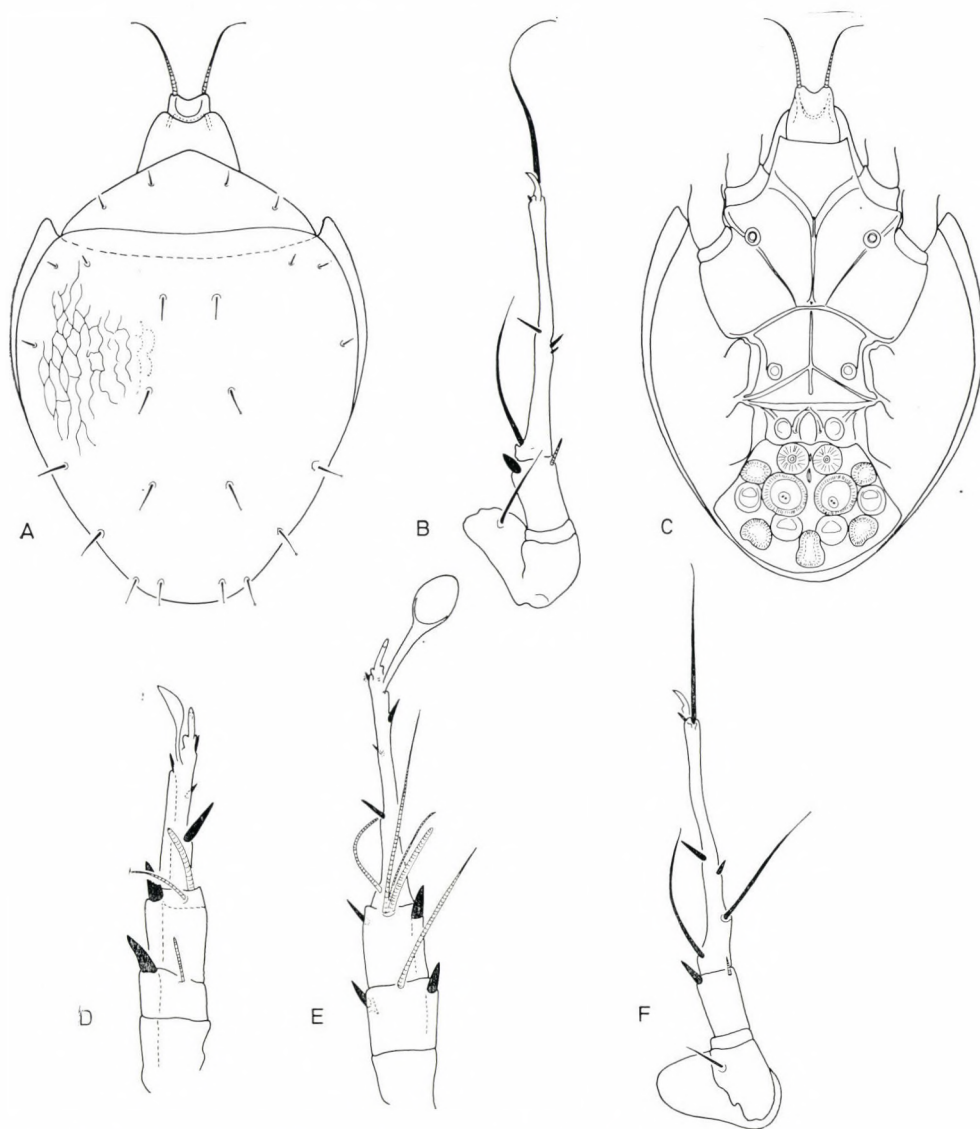


Fig. 13. *Pteranoetus kaszabi* sp. n. — A = dorsal side, B = leg III, C = ventral side, D = leg II, E = leg I, F = leg IV



## IV. A NEW ANOETID MITE FROM VIET-NAM

DR. J. D. LANG, research worker of the University of California, collected mites from insects in Viet-Nam. His material was sent to me for identification. One Anoetid mite was found, the description of which follows hereunder.

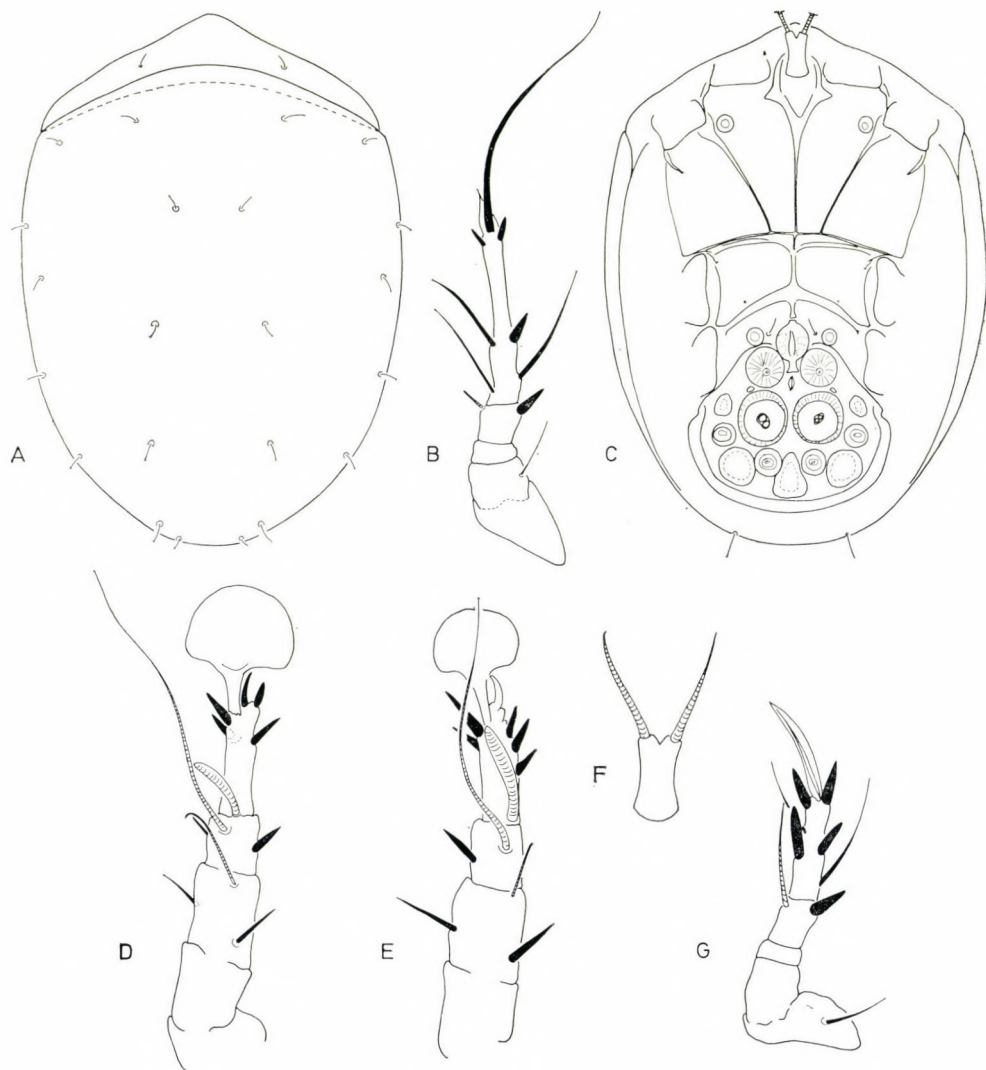


Fig. 14. *Anoetoglyphus langi* sp. n. — A = dorsal side, B = leg IV, C = ventral side, D = leg I, E = leg II, F = gnathosoma, G = leg III

**Anoetoglyphus langi** sp. n.

**M e a s u r e m e n t s.** Length: 186  $\mu$ , breadth: 136  $\mu$  (Holotypus).

**H a b i t u s.** Propodosoma ribbon-like, medially elevated like a cone, only slightly narrower than large and broad hysterosoma. Accordingly, body obovoid in outline.

**D o r s a l s i d e** (Fig. 14:A). Dorsosejugal region with no or a hardly discernible sculpture. Surface of hysterosoma smooth, at most weakly punctate. Dorsal hairs short, insertional points comparatively large, well discernible.

**V e n t r a l s i d e** (Fig. 14:C). Solenidia of gnathosoma (Fig. 14:F) short, robust, infracapitulum medially strongly constricted. Excepting ap. 4, apodemes thin, ap. sa. ending free. Epimeres 1 with a sucker, epimeres 3 with a minute insertion point discernible. Adhering plate very large, piriform, situated rather far from end of body. Adhering plates  $D_3$  and  $D_4$  minute,  $D_1$  and  $D_2$  large.

**L e g s.** Adhering hairs of legs I and II (Fig. 14:D, E) very large, phylliform, anterior end rounded. Solenidia  $\varphi_1$  and  $\varphi_2$  of leg I set wide apart,  $\varphi_1$  of legs I and II extraordinarily long, flagellate. End hair on leg III (Fig. 14:G) short, broader, on leg IV (Fig. 14:B) long and thin.

**M a t e r i a l e x a m i n e d :** Holotypus: Vietnam, Lai Khe, from venter of a beetle (Coleoptera: Scarabaeidae), 14. V. 1968. leg. J. D. LANG. 2 paratypes: collected with holotype. Holotype deposited in the collection of DR. J. D. LANG, the two paratypes (181-PA-77) in the HNHM.

I dedicate the new species to DR. JAMES J. LANG, the collector of this material.

**R e m a r k s.** Several quite similar species have recently been described in the genus *Anoetoglyphus* OUDEMANS, 1927, from Africa. According to the habitus and chaetotaxy of the new species, it comes close to *A. polygonatus* MAHUNKA, 1973, but the dorsal sculpture is missing here, further, there is a difference in the end hair of leg III as well as in the shape of the adhering hairs of legs I and II.

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## BRACONIDAE (HYMENOPTERA) FROM KOREA. III\*

By

J. PAPP

(Received 29. April, 1977)

Twelve Opiinae (Braconidae) species are reported from North Korea, five are new to science: *Diachasma disputabilis* sp. n. ♀, *Opius fraudatus* sp. n. ♀♂, *Opius ostentatus* sp. n. ♀♂, *Opius porrectus* sp. n. ♂ and *Opius valens* sp. n. ♀♂. Genus *Bitomus* SZÉPLIGETI, 1910 is transferred from subfamily Cheloninae into subfamily Opiinae and represents a senior synonym name over *Coleopius* FISCHER, 1964. With 26 figures.

OPIINAE CRESSON, 1887

**Bitomus SZÉPL.**

*Bitomus* SZÉPLIGETI, 1910, Notes Leyden Mus., **32**: 89.

*Coleopius* FISCHER, 1964, Ann. Naturhist. Mus. Wien, **67**: 409, **syn. n.**

The genus *Bitomus* SZÉPL. was incorrectly placed by SZÉPLIGETI (l. c.) in the subfamily Cheloninae. Venation of wing and form of head (especially the mouthparts) relegates this genus to the subfamily Opiinae. The genus *Bitomus* comprises species with Old World distribution.

**Bitomus braconius SZÉPL.**

*Bitomus braconius* SZÉPLIGETI, 1910, Notes Leyden Mus., **32**: 89, ♀.

*Coleopius testa* FISCHER, 1966, Rev. indo-austr. Opiinae, p. 144, ♀, **syn. n.**

**Distribution:** Java, Sumatra.

Female holotype of *Bitomus braconius* SZÉPL. is deposited in the Hungarian Natural History Museum, Budapest; Hym. Typ. No. 2412. Its locality data: "E. JACOBSON, Pangrango, Java, Oct 1908" (printed on one label).

Remark. The above synonyms (*Bitomus* SZÉPL. = *Coleopius* FL., *B. braconius* SZÉPL. = *C. testa* FL.) were strengthened by DR. M. FISCHER (Wien) in his letter to me dated October 6, 1975. Herewith I express my thanks for his kind cooperation in supporting the synonyms.

**Bitomus grangeri (FL.) comb. n.**

*Coleopius grangeri* FISCHER, 1964, Ann. Naturhist. Mus. Wien, **67**: 410, ♀.

**Distribution:** France, Hungary.

**Bitomus hemicoriaceus (FL.) comb. n.**

*Coleopius hemicoriaceus* FISCHER, 1966, Rev. indo-austr. Opiinae, p. 140, ♂.

**Distribution:** Viet-Nam (Saigon), India ("Namkum"), Bismarck Islands, Korea (new record).

\* Zoological Collectings by the Hungarian Natural History Museum in Korea, No. 34.



I have taken two males in North Korea which in some infraspecific features deviate from the original description (l. c). Antenna 24- (1 ♂, loc. No. 144), and 25-jointed (1 ♂, loc. No. 231).  $r1$  emitting from middle of stigma,  $r2$  a third longer than  $cuqul$  (18 : 12,  $\times 63$ ),  $r2 : r3$  as 18 : 32 ( $\times 63$ ), *n. rec.* distinctly postfurcal. First tergite shorter than wide at hind (22 : 28,  $\times 63$ ).

Localities. 1. Prov. South Pyongan: Pyongyang, Pyongyang Hotel garden, 5–6 Aug. 1971, 1 ♂, No. 144. Caught in Malaise-trap. — 2. Prov. South Pyongan: Za-mo san, 60 km NE from Pyongyang, 2 Sept. 1971, 1 ♂, No. 231. Netted in sweet chesnut (*Castania crenata*) forest in nature conservancy field.

***Bitomus novohebridicus* (Fl.) comb. n.**

*Coleopius novohebridicus* FISCHER, 1966, Rev. indo-austr. Opiinae, p. 142, ♂.

Distribution: New Hebrides.

***Diachasma disputabilis* sp. n. ♀ (Figs. 1–4)**

The generic feature, viz. the “open” mouth (FISCHER 1973), relegates the new species to the genus *Diachasma* FÖRST. However, disregarding this feature, the habitus of the new species appears much like that of a *Biosteres* species. In some respects it is very difficult to recognize as a new species and to distinguish it from its nearest allies. Taxonomically it stands close to *Diachasma xanthopus* (FÖRSTER, 1962) (German Federal Republic: Aachen), *Biosteres carbonarius* (NEES, 1834) (Holarctic Region) and *B. remigii* FISCHER, 1971 (Mongolia, Hungary: new record).

♀. Instead of a detailed description and in favour of a definite discernment it seems more reasonable to expound the distinctive features comparing with its allies, respectively.

***D. xanthopus* (FÖRST.)**

1. Third joint of antenna four times longer than broad.
2. First tergite two-thirds as long as broad at hind.
3.  $r3$  twice longer than  $r2$ .
4. Face with dense and rather deep punctation, clypeus smooth.
5. Propodeum rugose to roughly rugose, with a medio-transverse and more or less distinct carina.
6. Temple half as wide as horizontal diameter or width of eye (in lateral view).
7. Ocelli relatively large, distance between them equal with diameter of an ocellus.
8. Mandible without any subtooth below at base.
9. Third femur thrice longer than broad.

***D. disputabilis* sp. n.**

1. Third joint of antenna 2.5 times longer than broad.
2. First tergite as long as broad at hind (Fig. 3).
3.  $r3$  thrice longer than  $r2$  (Fig. 2).
4. Face almost smooth, i.e. with rather disperse and very shallow subpunctation (along eye).
5. Propodeum rugose to subrugose-subrugose, without any medio-transverse carina.
6. Temple and eye equal in width (in lateral view).
7. Ocelli relatively small, distance between them 1.5 times longer than greatest diameter of an ocellus (all three ocelli elliptic in form).
8. Mandible with a pointed subtooth below at base (Fig. 1).
9. Third femur nearly four times longer than broad.

**Biosteres carbonarius** (NEES)

1. Mouth "closed", i.e. opening absent between clypeus and mandibles when mandibles closed (generic difference).
2. Antenna long, a quarter longer than body, 40—45-jointed.
3. First flagellar joint 2.5 times longer than broad (10 : 4). Every flagellar joint distinctly longer than broad, penultimate joint twice as long as broad. Flagellum distally more tapering.
4. First tergite gradually widening posteriorly (Fig. 5).
5. Scutellum more or less rugose-rugulose on its hind half to two-thirds.
6. Ovipositor sheath short, at most as long as hind basitarsus (in lateral view).
7. *nv* more postfurcal, i.e. its distance from *n. bas.* twice-thrice greater than its own width.
8. Mandible without any subtooth below at base.

**Biosteres remigii** Fl.

1. Mouth almost "closed", i.e. a very narrow opening present between clypeus and mandibles (generic difference).
2. First flagellar joint thrice longer than broad (14—15 : 5), further joints gradually shortening, middle joints 1.5 times longer than broad, penultimate 3—4 joints subcubic.
3. Mandible with a rather blunt subtooth below at base (Fig. 6).
4. Hypopygium "short", it reaches as far as middle of abdomen (Abb. 456, in Fischer 1973: 605).

**D. disputabilis** sp. n.

1. Mouth "open", i.e. opening present between clypeus and mandibles when mandibles closed (generic difference).
2. Antenna short, somewhat shorter than body, i.e. not reaching end of abdomen, 32—34-jointed.
3. First flagellar joint 2.5 to twice longer than broad (10 : 4—5). Flagellar joints gradually shortening so that distal (or last) 13—16 joints cubic, i.e. as long as broad, apical joint pointed. Flagellum distally less tapering.
4. First tergite distinctly widening as far as spiracle, its hind half parallel sided (Fig. 3).
5. Scutellum entirely smooth.
6. Ovipositor sheath long, nearly as long as hind tarsus (Fig. 4).
7. *nv* less postfurcal, i.e., its distance from *n. bas.* at most equal with its own width.
8. Mandible with a pointed subtooth below at base (Fig. 1).

**D. disputabilis** sp. n.

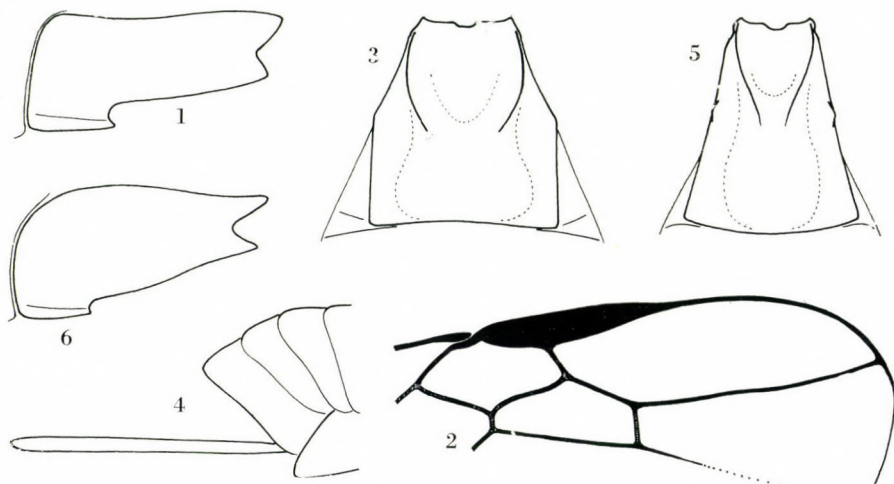
1. Mouth "open", i.e. a distinct opening present between clypeus and mandibles (generic difference).
2. First flagellar joint 2.5 times to twice longer than broad, further joints gradually shortening so that distal 13—16 joints cubic.
3. Mandible with a pointed subtooth below at base (Fig. 1).
4. Hypopygium "long", it reaches more or less beyond middle of abdomen (Fig. 4).

Additional features. — Body 4—4.5 mm long. Head (from above) twice wider than long, temple and eye (in lateral view) equal in horizontal width. Maxillar palpus as long as height of head. Frons, vertex, occiput and temple polished. Thorax stout as usually, ratio of its length to height as 50—55: 35—40 ( $\times 40$ ). Fore pronotal furrow shallow and feebly crenulated, otherwise pronotum smooth. Mesonotum, scutellum and mesopleura polished. Fore wing (Fig. 2) about as long as body. Stigma six times longer than wide, *r1* issuing before its middle, *r1* slightly shorter than or as long as width of stigma. *r2* hardly distinctly shorter than *cuq1* (24—25 : 25—27). *d* 1.7 times longer than *n. rec.*, *n. rec.* of hind wing indistinct. Hind tibia and tarsus equal in length. Abdomen as long as head and thorax together. Every tergite except first one polished. — Black. Clypeus blackish brown (holotype) or reddish brown



(paratypes). Mandible dark yellow to yellow, apically black. Palpi brownish yellow. Tegula brownish yellow or brown. Legs yellow, hind coxa brown to black, tarsi fumous. Abdomen dark brown to blackish brown, first tergite black. Wings feebly fumous. Stigma and veins almost evenly dark brown.

♂ and host unknown.



Figs. 1–4. *Diachasma disputabilis* sp. n. ♀: 1 = mandible, 2 = distal part of right fore wing, 3 = first tergite, 4 = end of abdomen with ovipositor sheath. — Fig. 5. *Biosteres carbonarius* (NEES) ♀: first tergite. — Fig. 6. *Biosteres remigii* Fr. ♀: mandible

Locality. "Korea, Prov. Ryang-gang, Mt. Pektusan, 1900 m, 28 Aug. 1971. — No. 217, leg. S. HORVATOVICH et J. PAPP", 3 ♀ (1 ♀ holotype and 2 ♀ paratypes). Netted in a clearing with *Aconitum* flowers in *Larix-Betula* forest near the upper forest level.

Holotype and two paratypes deposited in the Hungarian Natural History Museum, Budapest; Hym. Typ. No. 2413 (holotype), 2414–2415 (paratypes).

**Opus (Cryptonastes) blantoni** FISCHER, 1964 (= *O. brusceanus* FISCHER, 1967; = *O. vockerothi* FISCHER, 1964). — Antenna 30 (1 ♂) and 32 jointed (1 ♂). Apex of radial cell rather approaches (and not reaches) end of wing. Spiracles of first tergite distinct (or slightly protruding).

*O. blantoni* is very similar to *O. impatientis* FISCHER, 1957 (Europe), the specific differences between the two forms are difficult to recognize. The name *vockerothi* was recently put in synonymy with *blantoni* by MARSH (1974).

The Holarctic distribution of this species is strengthened by its occurrence in Korea. Up to now listed in Europe (Germany, Austria) and North America (Canada, USA); new to the fauna of Korea.

Locality. Prov. Ryang-gang: Chann-Pay plateau, Sam-zi-yan, 1700 m, 24 July 1975, 2 ♂, No. 282.

**Opus (Nosopoea) cubitalis** FISCHER, 1959. — Reported sporadically from Austria in Europe, and from Japan in Asia. New to the fauna of Korea.

Locality. Prov. Ryang-gang: Chann-Pay plateau, Sam-zi-yan, 1700 m, 24 July 1975, 1 ♂, No. 282.

***Opius (Grimnirus) fraudatus* sp. n. ♀♂ (Figs. 7—10)**

♀. Body 2.4 mm long. Head (from above) transverse, twice broader than long (37 : 18,  $\times 63$ ), behind eyes rounded, constricted (Fig. 7), eye not protruding from outline of head. Face quadrate, its width equal with height, inner margin of eyes below feebly diverging. Clypeus semicircular, only somewhat wider than high, its frontal margin weakly arched (Fig. 8). Cheek distinctly shorter than basal width of mandible. Mandible gradually (and not dentiform) broadening basally. Mouth closed. Horizontal diameter of eye equal or slightly shorter than width of temple (10 : 10—11,  $\times 63$ , in lateral view). Ocelli forming an equilateral triangle, fore ocellus round and somewhat smaller than hind two ocelli which are elliptic in form. Distance between hind two ocelli minutely greater than diameter of an ocellus (6 : 5), OOL 2.5 times greater than POL. Maxillar palpus shorter than height of head. Entire head polished.

Antennae of female broken, both antennae with 17 joints; male with 25 joints. Third antennal joint 2.6 times longer than broad (13 : 5,  $\times 100$ ), further ones twice longer than broad.

Thorax a quarter longer than high, ratio of thoracic length to height and width as 47 : 37 : 30 ( $\times 63$ ). Propleura, mesonotum, scutellum, mesopleura polished. Notauli restricted to declivous part of mesonotum, deep. Dorsal pit round, deep. Propodeum rugose, its upper horizontal fifth smooth to uneven, with a medio-longitudinal and rather less distinct carina. Metapleura smooth to uneven, its lower third rugose. Sternauli usual in width, less deep, and rather weakly crenulated. Hind femur four times longer than broad. Hind tibia as long as hind tarsus.

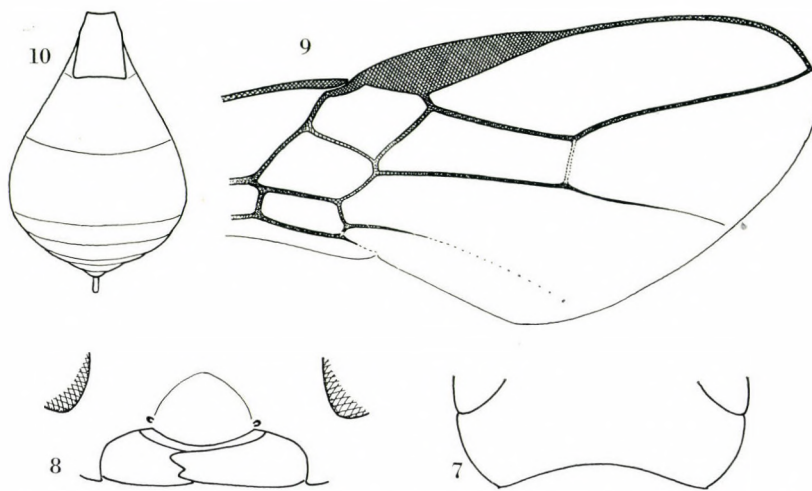
Fore wing longer than body. Stigma (Fig. 9) wedge-shaped, 4.2 times longer than broad (55 : 13,  $\times 100$ ), issuing *r1* from its proximal half. *r1* short, *r2* twice longer than *cuqul* (38 : 20,  $\times 100$ ), *r3* 1.5 times longer than *r2* and reaching tip of wing. *n. rec.* distinctly postfurcal. *d* distinctly longer than *n. rec.* (20 : 12,  $\times 100$ ). *nv* postfurcal. *B* closed, *n. par.* originating from its lower third. *n. rec.* of hind wing indistinct.

Abdomen (Fig. 10) nearly as long as head and thorax together, its outline (from above) subglobose, a third longer than broad and conspicuously broader than thorax. First tergite (Fig. 10) somewhat longer than wide at rear, evenly widening distally, ratio of its length to fore and hind width as 32 : 17 : 27 ( $\times 100$ ) with a pair of convergent keel disappearing in rugosity on hind half of tergite, entire tergite almost evenly rugulose to rugose. Tergites 2—3 long, comprising more than half length of abdomen, second tergite as long as third one, border between them almost indistinct. Second tergite medially chagreened, otherwise together with further tergites polished. Ovipositor sheath short, as long as hind basitarsus (in lateral view).



Body black. Mandible yellow, its apex brown to black. Clypeus brownish yellow. Palpi pale yellow. Scape yellow, pedicel brown, flagellum brownish black to black. Tegulae dark brown to brown. Legs yellow. Sternites yellowish brown to brown. Wings subhyaline. Stigma and veins greyish brown.

♂. Similar to female. Body 2.4 mm long. Antenna 25-jointed, third antennal joint thrice longer than broad ( $15 : 5$ ,  $\times 100$ ), further joints gradually



Figs. 7–10. *Opius (Grimnirus) fraudatus* sp. n. ♀♂: 7 = head behind eyes (from above), 8 = clypeus and mandibles, 9 = distal half of fore right wing, 10 = abdomen (from above)

attenuating so that penultimate joint also thrice longer than broad ( $8.5 : 3$ ,  $\times 100$ ).  $r_3$  1.7 times longer than  $r_2$ . Chagreen sculpture of tergite 2 somewhat stronger. Stigma and veins brown to dark brown.

Host unknown.

Localities. 1. "Korea, Prov. Pyong-sung, Bek-sung-li, Za-mo san, 60 km NE from Pyongyang — No. 305, 1 August 1975, leg. J. PAPP et A. VOJNITS", 1 ♀ (holotype). Netted in a sweet chesnut wood in nature conservancy field early in the afternoon, vegetation wet, after 13 o'clock cloudy weather with sunshine and  $28-30^{\circ}\text{C}$ . — 2. "Korea, Prov. South Pyongan, Nam-po — No. 273, 19 July 1975, leg. J. PAPP et A. VOJNITS", 1 ♂ (allotype). Netting the shrub level of *Robinia-Castanea* wood.

Holotype and allotype deposited in the Hungarian Natural History Museum, Budapest; Hym. Typ. No. 2416 (holotype), 2417 (allotype).

The new species seems to be the nearest to *Opius (Grimnirus) hardmanni* FISCHER, 1964 (western USA) considering only its description (FISCHER, 1964a). The main specific differences comprise the following features:

**O. (Oplostomus) hardmanni** Ff.

1. Mandible dentiform broadened at its lower base (subgeneric difference, Abb. 7 in FISCHER 1964a: 211).
2.  $r_2$  1.5 times longer than *cuqul* (13 : 8).
3. *d* hardly longer than *n. rec.* (7 : 6).
4. Third femur 7 times as long as broad.
5. Horizontal diameter of eye distinctly greater than width of temple (5 : 3, in lateral view).

**O. (Grimnirus) fraudatus** sp. n.

1. Mandible gradually broadening basally (subgeneric difference, Fig. 8).
2.  $r_2$  twice longer than *cuqul* (38 : 20,  $\times 100$ , Fig. 9).
3. *d* distinctly longer than *n. rec.* (20 : 13,  $\times 100$ , Fig. 9).
4. Third femur 4 times as long as broad.
5. Horizontal diameter of eye equal or slightly shorter than width of temple (10 : 10–11,  $\times 63$ , in lateral view).

*Opius* (*Grimnirus*) *fraudatus* sp. n. is related to *Opius* (*Frekius*) *malivorellae* FISCHER, 1964 (central and eastern USA), and the two species may be distinguished by the following features:

**O. malivorellae** Ff.

1. Second tergite smooth (subgeneric difference).
2. *n. rec.* antefurcal or at least intersitial (Abb. 10 in FISCHER 1964a: 214).
3. Penultimate joint of antenna 1.5 times as long as broad ( $\varnothing$   $\delta$ ).
4. Face 1.5 times wider than high, with dense and rather deep punctation.
5. Third femur thrice as long as broad.

**O. fraudatus** sp. n.

1. Second tergite more or less chagreened (subgeneric difference).
2. *n. rec.* distinctly postfurcal (Fig. 9).
3. Penultimate joint of antenna thrice as long as broad ( $\delta$ ).
4. Face quadrate, slightly wider than high (35 : 30,  $\times 100$ ), smooth and shiny.
5. Third femur four times as long as broad.

***Opius* (*Cryptonastes*) *gracilis*** FISCHER, 1957. — The four females agree with the type-series (9  $\varnothing$  and 3  $\delta$ ) originating from Hungary and deposited in the Hungarian Natural History Museum, Budapest. The reddish yellow colour of the thorax of one specimen (loc. No. 145) seems likely as an exceptional mark; thorax usually black, however, in our specimen the thorax appears reddish yellow, only its dorsal surface is black. Antenna 21- (2  $\varnothing$ ) and 24-jointed (1  $\varnothing$ ).

Reported from several countries of Europe and from Kazakhstan (Celinograd = Akmo-linsk), USSR. New to the fauna of Korea.

Localities. 1. Prov. Kanwon: Kum-gang san, environs of Hotel Go-song, 29 May 1970, 1  $\varnothing$ , No. 52. — 2. Prov. South Pyongan: De-sang san, 12 km NE from Pyongyang, 7 Aug. 1971, 1  $\varnothing$ , No. 145. — 3. Prov. South Pyongan: Pyongyang, Nung-ra do, 17 Aug. 1971, 2  $\varnothing$ , No. 182.

***Opius* (*Allotypus*) *irregularis*** WESMAEL, 1835. — The single female manifests some features deviating from the respective ones of the European representatives. I consider these deviations as infraspecific variability in consequence of its wide distribution in the Holarctic Region.

## European (Hungarian) females

1. Body 1.8–2 mm long.
2. Head (from above) distinctly twice broader than long (43–44 : 22–23,  $\times 100$ ), and rather exceptionally broader.
3.  $r_2$  1.7–2, usually 1.7–1.8 times longer than *cuqul*.
4. Antero-median third (or fourth) of second tergite finely rugulose.

## Korean female

1. Body 1.6 mm long.
2. Head (from above) less than twice as broad as long (34–35 : 19,  $\times 100$ ).
3.  $r_2$  2.2 times longer than *cuqul* (22 : 10,  $\times 100$ ).
4. Entire second tergite smooth. (In Nearctic Region representatives are known with fully smooth second tergite.)



In Europe frequent, listed also in Azerbaidzhan (USSR), in the USA rather sporadically reported from the northwestern and the eastern states. New to the fauna of Korea.

Locality. Prov. South Pyongan: De-sang san, 12 km NE from Pyongyan, 7 Aug. 1971, 1 ♀, No. 145.

***Opius (Nosopoea) ostentatus* sp. n. ♀♂ (Figs. 11—14)**

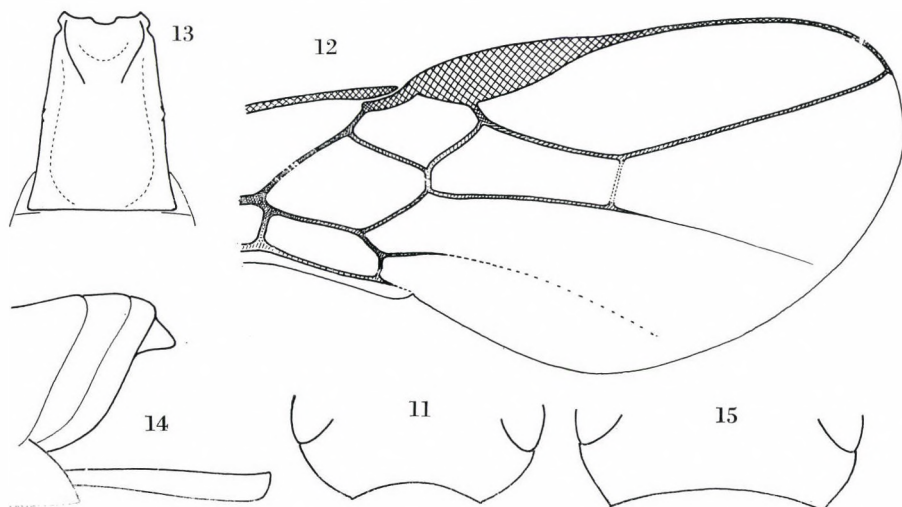
♀. Body somewhat elongated in form, 2.6 mm long. Head (from above) transverse, twice wider than long (35 : 18,  $\times 63$ ), between eyes distinctly wider than between temples, head behind eyes strongly constricted, occiput distinctly excavated (Fig. 11). Horizontal diameter of eye longer than width of temple (11 : 8,  $\times 63$  Face), somewhat wider than high (30 : 23,  $\times 100$ ), inner margin of eyes parallel. Clypeus rather semicircular, almost twice wider below than high, its lower margin weakly arched. Length of cheek and basal width of mandible equal with each other. Mouth open. Mandible gradually broadening basally. Maxillar palpus longer than height of head. OOL = POL. Antenna about one-and-a-half times longer than body, 34-jointed. Third antennal joint (almost) four times as long as broad (15 : 4,  $\times 100$ ), further ones gradually shortening and attenuating so that penultimate joint almost thrice as long as broad (8 : 3,  $\times 100$ ).

Thorax elongated, 1.5 times as long as high, ratio of its length to height and width (between tegulae) as 55 : 35 : 26 ( $\times 63$ ). Mesonotum and scutellum hairy (similar to that of *Opius maculipes* WESM.). Thorax smooth, shiny. Notauli restricted to declivous part of mesonotum. Dorsal pit deep. Propodeum rugose without any carination. Propleura anteriorly and lower third of metapleura rugulose. Sternaulus distinct as a feeble impression. Third femur thick, thrice longer than broad. Third tibia and tarsus equal in length.

Fore wing longer than body. Stigma (Fig. 12) almost four times longer than wide, wedge-shaped, issuing radial vein proximal from its middle. *r1* a third as long as width of stigma; *r2* twice as long as *cuqul* (38 : 20,  $\times 100$ ), *r3* almost twice as long as *r2* and reaching end of wing. *n. rec.* distinctly postfurcal, somewhat shorter than *d. nv* only slightly postfurcal. *B* closed, *n. par.* originating from its middle.

Abdomen also elongated, twice longer than wide, distinctly wider than thorax. First tergite (Fig. 13) slightly longer than wide at rear, evenly widening posteriorly, proportion of its length to fore and hind width as 24 : 13 : 20 ( $\times 100$ ), evenly rugose, its two convergent keels disappearing in rugosity on hind half of tergite. Anterior third of second tergite finely and rather longitudinally rugulose, otherwise together with further tergites polished. Hypopygium (Fig. 14) ending far before apex of abdomen. Ovipositor sheath (in lateral view) almost as long as a third of abdomen, and as long as tarsal joints 1—2 of hind leg (Fig. 14).

Head, thorax and first tergite dark brown, further tergites brown, sternites yellow (laterally rather brownish yellow). Cheek towards mandible, clypeus, labrum, maxille and mandible (except its black apex) yellow. Palpi pale yellow. Scape, pedicel and flagellar joints 1—3 yellow, further joints gradually darkening brownish yellow. Tegulae brownish yellow. Legs yellow,



Figs. 11—14. *Opius (Nosopoea) ostentatus* sp. n. ♀♂: 11 = head behind eyes (from above), 12 = distal half of right fore wing, 13 = first tergite, 14 = end of abdomen with ovipositor sheath. — Fig. 15. *Opius (Nosopoea) maculipes* WESM. ♀: head behind eyes

coxae and trochanters pale yellow, claws brown. Wings subhyaline. Stigma and veins yellowish brown, *n. bas.* and *d* brown.

♂ similar to female. Antenna somewhat darker, 33-jointed. First tergite nearly 1.3 times longer than wide at rear, ratio of its length to hind width as 23 : 18 ( $\times 100$ ). Second tergite entirely polished.

Host unknown.

Localities. 1. "Korea, Prov. Ryang-gang, Plateau Chann-Pay, Sam-zi-yan, 1700 m, 27 Aug. 1971 — No. 209, leg. S. HORVATOVICH et J. PAPP", 1 ♀ (holotype). Caught in Malaise-trap in *Larix-Betula* (or taiga) forest in rain falling from time to time. — 2. "Korea, Prov. Ryang-gang, Plateau Chann-Pay, Sam-zi-yan, 1600 m, 25 Aug. 1971 — No. 198, leg. S. HORVATOVICH et J. PAPP", 1 ♂ (allotype). Caught in Malaise-trap.

Holotype and allotype deposited in the Hungarian Natural History Museum, Budapest; Hym. Typ. No. 2418 (holotype) and 2419 (allotype).

The new species seems to be closely allied to *Opius (Nosopoea) borneanus* FISCHER, 1962 (Oriental Region: Borneo) which I know only from its original description (FISCHER, 1962). The specific differences between them may be given as follows:



**O. borneanus** Fl.

1. Body 3.6 mm long.
2. Head (from above) behind eyes almost as wide as between eyes, i.e. temple rounded, gradually constricted.
3. Maxillar palpus as long as height of head.
4. Antenna 42-jointed, third joint thrice longer than broad (♀).
5.  $r_2$  1.5 times as long as *cuqul* (19 : 12, Abb. 8 in FISCHER 1962: 85).
6. Body black, legs brown.

**O. ostentatus** sp. n.

1. Body 2.4–2.6 mm long.
2. Head (from above) behind eyes clearly not so wide as between eyes, i.e. temple strongly constricted (Fig. 11).
3. Maxillar palpus longer than height of head.
4. Antenna 33–34-jointed, third joint four times longer than broad (♀♂).
5.  $r_2$  twice as long as *cuqul* (38 : 20,  $\times 100$ , Fig. 12).
6. Head, thorax and first tergite dark brown, further tergites brown, sternites and legs yellow.

Two further species of the Holarctic Region, *Opius* (*Nosopoea*) *maculipes* WESMAEL, 1835 (western Palaearctic Region) and *Opius* (*Nosopoea*) *lemonensis* FISCHER, 1964 (southern USA, Mexico), are also related with the new species. *O. maculipes* known in nature, *O. lemonensis* known only on the base of its description. The specific differences of the three species may be tabulated as follows:

**O. maculipes** WESM.

1. Thorax a third longer than high.
2. Head behind eyes gradually constricted, occiput excavated normally (Fig. 15).
3. First tergite 1.3–1.5 times as long as wide at hind.
4. Second tergite polished.
5. Third femur 4–5 times longer than broad.
6.  $r_2$  1.3 times longer than *cuqul*.
7. Head, thorax and first tergite black, abdomen reddish yellow, legs yellow.

**O. lemonensis** Fl.

1. Thorax a half longer than high.
2. Head behind eyes rounded, constricted, occiput rather strongly excavated.
3. First tergite 1.5 times as long as wide at hind.
4. Second tergite medio-anteriorly with fine rugulosity (♀♂).
5. Third femur 5 times longer than broad.
6.  $r_2$  more than twice as long as *cuqul* (47 : 20,  $\times 100$ ).
7. Head, thorax and first tergite black, abdomen brown, legs yellow.

**O. ostentatus** sp. n.

1. Thorax a half longer than high.
2. Head behind eyes strongly constricted, occiput relatively strongly excavated (Fig. 11).
3. First tergite at least 1.2 times as long as wide at hind (Fig. 13).
4. Second tergite on its anterior third with fine rugulosity (♀).
5. Third femur thrice longer than broad.
6.  $r_2$  twice longer than *cuqul* (Fig. 12).
7. Head, thorax and first tergite dark brown, further tergites brown, sternites and legs yellow.

**Opius** (**Apodesmia**) **porrectus** sp. n. ♂ (Figs. 16–19)

♂. Body 2–2.9 mm long. Head (from above) twice wider than long, behind eyes rounded, constricted (Fig. 16), eye not protruding from outline of head. Face quadrate, slightly wider than high (35 : 30,  $\times 100$ ), with distinct and upwards aggregating punctation, along inner margin of eye and between

eye and antennal socket surface densely rugulose. Clypeus three-sided, almost twice wider than high, with similar punctation to face. Cheek as long as basal width of mandible. Horizontal diameter of eye equal with width of temple (in lateral view). Maxillar palpus longer than height of head. Vertex close to upper margin of eye with a short linear and deep impression. Ocelli relatively large, forming an equilateral triangle, fore ocellus round, hind two ocelli elliptic, distance between hind two ocelli equal with greatest diameter of an ocellus. Vertex, occiput and tempora polished. Antenna long, nearly twice longer than body, 35-jointed. Third antennal joint 3.5 times as long as broad ( $15 : 4$ ,  $\times 100$ ), further ones scarcely shortening and attenuating so that penultimate joint 2.5 times as long as broad ( $8 : 3$ ,  $\times 100$ ).

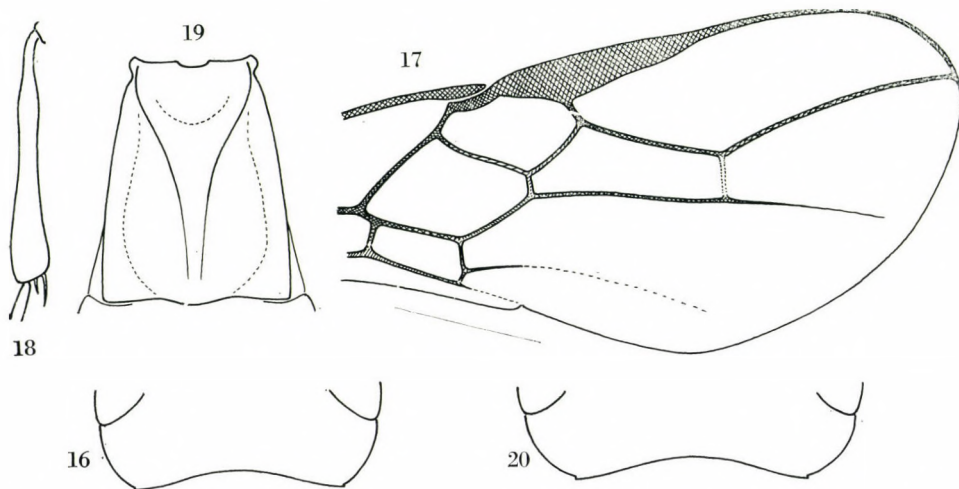
Thorax at least a third longer than high, proportion of its length to height (in lateral view) as  $58 : 45$  ( $\times 63$ ). Propleura polished, its medio-longitudinal and hind marginal crenulation weak. Mesonotum polished. Notauli distinct, antero-posteriorly shallowing and with fine crenulation, extending as far as hind third of mesonotum, and terminating somewhat far before dorsal pit. Dorsal pit close before prescutellar furrow, rather deep. Prescutellar furrow credunalted. Scutellum polished, bulging. Postaxille somewhat impressed and crenulo-rugose. Mesopleura polished, sternaulus rugo-crenulated and almost reaching crenulated fore margin of mesopleura, hind margin of mesopleura also crenulated (subgeneric feature) but not so strongly as fore one. Metapleura uneven, shiny. Propodeum evenly rugose, around lunule with radiate short crenulae, with a medio-longitudinal and less conspicuous carina. Every femur widest at their distal third. Hind femur four times as long as broad. Hind tibia slightly longer than hind tarsus, on its proximal half distinctly swollen (Fig. 18, in lateral view). Hind basitarsus almost as long as hind tarsal joints 2—4.

Fore wing somewhat longer than body. Stigma (Fig. 17) wedge-shaped, five times longer than broad, *r*1 emitting from its proximal third. *r*1 half as long as width of stigma and passing over to *r*2 almost unangled. *r*2 twice as long as *cu**q**u**l* ( $30 : 16$ ,  $\times 63$ ), *r*3 nearly twice as long as *r*2 and feebly arched, terminating tip of wing. *n. rec.* distinctly postfurcal, shorter than *d* ( $13 : 17$ ,  $\times 63$ ). *nv* postfurcal. *B* closed, *n. par.* originating from its lower third. *n. rec.* of hind wing indicated by pale pigmentation.

Abdomen as long as head and thorax together, somewhat broader than thorax. First tergite (Fig. 19) longer than wide at rear, gradually widening posteriorly, ratio of its length to fore and hind width as  $36 : 17 : 28$  ( $\times 63$ ), its two convergent keels meeting each other near before hind end of tergite. Anterior surface of first tergite (between keels) transversely rugulo-uneven, its posterior surface (behind keels) with distinct and longitudinal striation. Rest of abdomen polished. Tergites 2—3 equal in length, border between them almost indistinct.



Body black and yellow. Head black; mandible yellow with black apex; clypeus yellow, its upper part brownish; facial keel rusty brown; palpi pale yellow. Scape yellow, pedicel fumous yellow, flagellum blackish. Upper part of thorax black to brownish black, its lateral and lower part yellow. Mesonotum black, on its declivous lateral and postero-median surface dark rusty brown. Scutellum black, apically dark rusty brown. Metanotum rusty brown. Pro-



Figs. 16—19. *Opius* (*Apodesmia*) *porrectus* sp. n. ♂: 16 = head behind eyes (from above), 17 = distal half of fore right wing, 18 = third tibia, 19 = first tergite. — Fig. 20. *Opius* (*Allotypus*) *saevus* HAL. ♀: head behind eyes (from above)

podeum rusty, with a broad transverse black streak. Propleura above blackish, below yellow. Mesopleura, metapleura and ventral side of thorax yellow. Legs light yellow; coxae and trochanters pale yellow, last tarsal joints blackish fumous, claws black. Abdomen yellow. First tergite brownish yellow. Hind margin of tergites 3—6 dark brown, tergite 7 wholly dark brown. Stigma and veins greyish brown, stigma basally somewhat yellowish.

♀ and host unknown.

Locality. "Korea, Prov. Ryang-gang: Hyesan, Mt Ze-dong, 1150 m — No. 293, 26 July 1975, leg. J. PAPP et A. VOJNITS", 1 ♂ (holotype). The single male was netted at the edge of a *Larix* wood in shrubby level, 10—13.30<sup>h</sup>.

Holotype deposited in the Hungarian Natural History Museum, Budapest; Hym. Typ. No. 2420.

On the basis of the original description (FISCHER, 1964a) the new species is nearest to *Opius* (*Apodesmia*) *tablerockensis* FISCHER, 1964 (USA), and may be distinguished by the following features:

***O. tablerockensis* Fl.**

1. Notauli short, restricted to declivous part of mesonotum.
2. Propodeum with a pentagonal areola, issuing a carina anteriorly and with a transverse carina too, its surface smooth, rugulose along carinae.
3.  $r_2$  1.5 times longer than *cuqul* (12 : 8, Abb. 39 in FISCHER 1964a: 251).
4. Face with very fine and rather indistinct punctation.
5. Body black, tergites 2–3 and sternites yellow.

***O. porrectus* sp. n.**

1. Notauli long, extending on disc of mesonotum too and ending before dorsal pit.
2. Propodeum without any areola, with a medio-longitudinal carina, its surface evenly rugose.
3.  $r_2$  twice longer than *cuqul* (30 : 16,  $\times 63$ , Fig. 17).
4. Face distinctly punctated, between eye and antennal socket densely rugulose.
5. Head and dorsal surface of thorax black, otherwise body yellow to rusty.

***Opius* (*Allotypus*) *saevus* HALIDAY, 1837.** — Head behind eyes rounded, constricted (Fig. 20). Antenna 27–30- (♀) and 30–35- (♂) jointed. Propodeum rugose-rugulose, with a short, more or less distinct pair of carina issuing from lateral end of lunule. Femur 3 slightly impressed on its distal-upper part. Hind tarsus somewhat shorter than hind femur. Spiracle of first tergite relatively strong, resembling somewhat that of *O. saevulus* Fl. (1 ♀, loc. No. 282). Ovipositor sheath as long as one-third to nearly half of abdomen.

Up to now recorded sporadically in the British Isles, Denmark, Austria (FISCHER, 1974a–b) and Hungary (new record). The occurrence of this species in Korea indicates its wide distribution in the Palaearctic Region. New to the fauna of Korea.

Localities. 1. Prov. South Pyongan: Nam-po, 19 July 1975, 5 ♂, No. 273. — 2. Prov. Ryang-gang: Chann-Pay plateau, 24 km NW from Sam-zi-yan along the road to Mt. Pektusan, 2000 m, 24 July 1975, 2 ♀ and 1 ♂, No. 281. — 3. Prov. Chann-pay plateau, Sam-zi-yan, 1700 m, 24 July 1975, 3 ♀ and 6 ♂, No. 282. — 4. Prov. Ryang-gang: Chann-pay plateau. Mt. Pektusan, Mu-do-bong, 2100–2200 m, 25 July 1975, 1 ♀, No. 288. — Total 18 specimens (6 ♀ and 12 ♂).

***Opius* (*Cryptonastes*) *tersus* FÖRSTER, 1862 (= *O. consors* FISCHER, 1957).** — The male specimen at hand was compared with the type-series (13 ♀ and 5 ♂) of *O. consors* Fl. deposited in the Hungarian Natural History Museum, Budapest. The junior synonymy of *consors* Fl. with *tersus* FÖRST. was recognized by FISCHER himself in 1964b. The Korean male deviates from the types in a few infraspecific features. Antenna 20-jointed, third antennal joint four times longer than broad. First tergite rather longitudinally uneven. Abdominal segments 1–3 dark yellow, legs yellow. Body 1.1 mm long.

Reported sporadically from three European countries (Germany, Austria, Hungary). Supposedly widely distributed in the Palaearctic Region. New to the fauna of Korea.

Locality. Prov. South Pyongan: De-sang san, 12 km NE from Pyongyang, 7 Aug. 1971, 1 ♂, No. 145.

***Opius* (*Utetes*) *valens* sp. n. ♀♂ (Figs. 21–23)**

♀. Body strong, 4 mm long. Head (from above) transverse, twice wider than long, behind eyes gradually rounded (Fig. 21), width of head equal between eyes and between temples, eyes not protruding from outline of head. Face 1.5 (–1.6) times wider than high, with distinct, even and rather deep punctation, its median keel distinct. Ocelli small and forming an equilateral triangle, distance between two ocelli almost twice greater than diameter of an ocellus. Width of temple (in lateral view) somewhat greater than horizontal diameter of eye (15 : 12,  $\times 63$ ). Vertex laterally from ocellar field with fine punctation, otherwise together with antennal socket, occiput and tempora polished. Between hind two ocelli a short linear impression present. Maxillar



palpus as long as height of head. Antenna as long as body, 30-jointed, third antennal joint thrice longer than broad, further ones gradually shortening so that penultimate joint twice as long as broad, last 8—10 joints somewhat more separated from each other.

Thorax stout, proportion of its length to height and width (between tegulae) as 53 : 45 : 30 ( $\times 40$ ). Lower half of lateral part of pronotum evenly rugulose, its margin crenulated. Mesonotum and scutellum polished. Notauli extremely deep and crenulated on declivous part of mesonotum, otherwise indistinct. Dorsal pit linearly and deeply impressed on hind quarter of mesonotum, continuing anteriorly as a very shallow linear impression. Prescutellar furrow crenulated. Mesopleura polished, sternaulus wide and rugo-crenulated. Propodeum evenly rugose, its hind lateral corner smooth. Third femur somewhat stout, 3.2 times longer than broad. Third tarsus as long as third femur.

Fore wing somewhat longer than body. Stigma (Fig. 22) 2.7 times as long as wide (43 : 16,  $\times 63$ ), emitting radial vein from its middle. *r1* half as long as width of stigma. *Cu2* conspicuously long, *r2* twice longer than *cuqul* (42 : 20), *r2* and *cu2* parallel with each other, *r3* a quarter longer than *r2* (56 : 42,  $\times 63$ ). *R* terminating at tip of wing. *n. rec.* distinctly postfurcal, half as long as *d. n. rec.* of hind wing distinct.

Abdomen as long as and distinctly wider than thorax. First tergite (Fig. 23) gradually and evenly widening posteriorly, longer than wide at rear, ratio of its length to fore and hind width as 35 : 20 : 28 ( $\times 63$ ); two convergent carinae disappearing posteriorly; hind horizontal surface medially rather longitudinally rugulose, laterally smooth to uneven, shiny. Further tergites polished. Ovipositor sheath well visible and as long as tarsal joints 1—4 of third leg (in lateral view).

Body black. Palpi yellow. Mandible, labrum and lower margin of clypeus dark yellow. Scape brown. Tegulae and legs yellow, tarsi weakly fumous. Wings brownish fumous. Stigma blackish brown, with indistinct brown basal and apical spots, veins blackish brown to brown.

$\sigma$  similar to female. Antenna 32-jointed. Dorsal pit less linearly impressed. *r2* only 1.6 times longer than *cuqul* (36 : 22,  $\times 63$ ), *r3* 1.4 times longer than *r2*.

Host unknown.

Locality. "Korea, Prov. Ryang-gang: Chann-pay plateau, 24 km NW from Sam-zi-yan, road to Mt Pektusan, 2000 m — No. 281, 24 July 1975, leg. J. PAPP et A. VOJNITS", 1  $\varphi$  (holotype) and 1  $\sigma$  (allotype). Both specimens netted in a more or less devastated clearing of a *Larix-Betula* forest.

Holotype and allotype deposited in the Hungarian Natural History Museum, Budapest; Hym. Typ. No. 2421 (holotype) and 2422 (allotype).

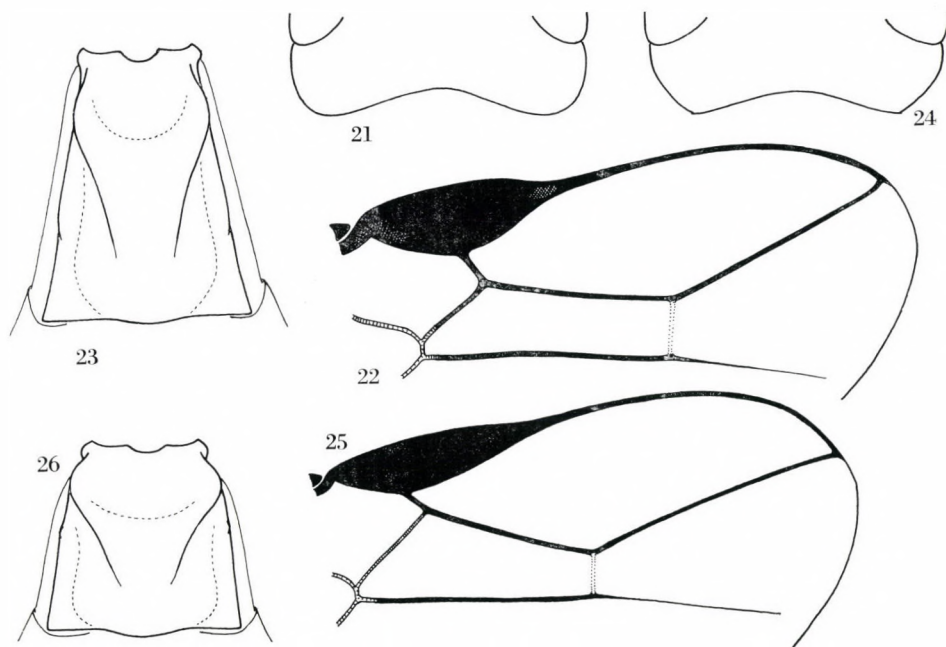
The new species stands nearest to *Opius* (*Utetes*) *truncatus* WESMAEL, 1835 (Europe, Mongolia), the differences between them are difficult to recognize, however, they are of specific value.

**O. truncatus** WESM.**O. valens** sp. n.

1. Body relatively less strong.
2. Head behind eyes (from above) rounded, constricted (Fig. 24).
3. Antenna 34–42-jointed.
4. Punctuation of face relatively weak yet distinct.
5. Lateral part of pronotum smooth (disregarding marginal crenulation).
6. *Cu2* less long, *r2* and *cu2* convergent, *r2* at most 1.6–1.7 times longer than *cuu1*, *r3* 1.5 times as long as *r2* (Fig. 25).
7. Ovipositor sheath (in lateral view) short, at most as long as hind basitarsus.

1. Body relatively strong.
2. Head behind eyes (from above) not constricted (Fig. 21).
3. Antenna 30–32-jointed.
4. Punctuation of face relatively strong.
5. Lower half of lateral part of pronotum evenly rugulose.
6. *Cu2* long, *r2* and *cu2* parallel with each other, *r2* twice longer than *cuu1*, *r3* only a quarter longer than *r2* (Fig. 22).
7. Ovipositor sheath (in lateral view) long, as long as hind tarsal joints 1–4.

The new species resembles *Opius* (*Utetes*) *trisulcus* THOMSON, 1895 (north and central the Europe), the distinctive features between them are as follows:



Figs. 21–23. *Opius* (*Utetes*) *valens* sp. n. ♀♂: 21 = head behind eyes (from above), 22 = distal part of fore right wing, 23 = first tergite. — Figs. 24–25. *Opius* (*Utetes*) *truncatus* WESM. ♀: 24 = head behind eyes (from above) 25 = distal part of fore right wing. — Fig. 26. *Opius* (*Utetes*) *trisulcus* THOMS. ♀: first tergite



**O. trisulcus** THOMS.**O. valens** sp. n.

- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. Head (from above) more than twice as wide as long (55 : 25, <math>\times 63</math>).</li> <li>2. Face with very fine and rather disperse punctuation.</li> <li>3. Third antennal joint at most 1.5 times longer than broad.</li> <li>4. First tergite usually as long as wide at hind, from spiracles feebly widening (Fig. 26).</li> <li>5. Venation of fore wing (<i>r</i>1—3, <i>cu</i>1, <i>cu</i>2, <i>R</i>, <i>Cu</i>2) similar to that of <i>O. truncatus</i>.</li> <li>6. Postaxille entirely smooth.</li> </ol> | <ol style="list-style-type: none"> <li>1. Head (from above) twice as wide as long.</li> <li>2. Face with strong and rather dense punctuation.</li> <li>3. Third antennal joint thrice longer than broad.</li> <li>4. First tergite longer than wide at hind, gradually and evenly widening posteriorly (Fig. 23).</li> <li>5. Venation of fore wing see in description (Fig. 22).</li> <li>6. Anterior half of postaxille rugulo-crenulated.</li> </ol> |
|---|---|

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## NEW SPECIES AND RECORDS OF SPHAEROCERIDAE (DIPTERA) FROM AFGHANISTAN\*

By

L. PAPP

(Received May 1, 1977)

Locality data of 57 sphaerocerid species (represented by 4075 exemplars) from Afghanistan are given, with description of nine new species [*Limosina dudai* sp. n. (also from Sumatra), *L. ghaznavi* sp. n., *L. rohaceki* sp. n., *Leptocera (Rachispoda) afghanica* sp. n., *L. (R.) ariana* sp. n., *L. (R.) gel* sp. n., *L. (R.) kabuli* sp. n., *L. (R.) meges* sp. n., *L. (R.) micropyga* sp. n.]; 33 species new to the fauna of Afghanistan.

Only 2 papers have so far treated the Sphaerocerid fauna of Afghanistan. RICHARDS (1962) recorded 18 species, while HACKMAN (1969) increased by four additional species the Afghanian fauna. These 22 species are considerable, if compared with the known Afghanian fauna of the other fly families; however, it represents only a fragment of the Afghanian Sphaerocerid fauna. During my trip three years ago (PAPP, 1975a), I have collected 4058 Sphaerocerid individuals. This material is complemented by the one I received for study from the collections of the Moravské Museum, Brno. I had occasion to study in Brno the Sphaerocerid material collected by Czechoslovakian workers in Afghanistan (cf. HACKMAN, 1969), and I borrowed 17 specimens for additional investigations. The entire material contained 57 species, of which 9 proved to be new to science, while 33 appeared to be new for the fauna of Afghanistan, therefore the known fauna became augmented by the recognition of 42 species. On the other hand, there were missing 7 species recorded previously [RICHARDS (1962): *Ischiolepta denticulata* (MEIGEN, 1830), *Limosina czizeki* (DUDA, 1918), *Limosina talparum* RICHARDS, 1927, *Leptocera caenosa* (RONDANI, 1880), *L. (Rachispoda) limosa* (FALLÉN, 1820); HACKMAN (1969): *Limosina simplicipes* (DUDA, 1925)]. Thus there is known today 64 Sphaerocerid species from Afghanistan, which, however, is still only about half of the complete fauna in my estimation. Excepting the species *Ceroptera rubricornis* (DUDA) (Turkmenia, Afghanistan), the known 22 species prior to my study have been known as widely ranging or Western Palaearctic species. The latest 42 species render the zoogeographical picture of the Afghanian Sphaerocerid fauna considerably more divers, indeed, rather difficult to assess for the time being. I found in the material 3 species described from Mongolia, while two of the new species are

\* Contributions by Hungarian zoologists to the exploration of invertebrates in Afghanistan, No. 6.



almost surely characteristic elements of the Oriental Region (these have been collected in the environment of Jalalabad), and so on. Since the area of a number of Sphaerocerid species is not sufficiently known, and as one may expect the showing of a great number of species from Afghanistan in the future, the time has not yet come for a zoogeographical characterization of the fauna under discussion. In the followings, I submit the known distribution data with respect to the more interesting species.

One of the main characteristics of my material is the great interest of species developing and collected in muddy sites along the shores of ditches (mainly species of the subgenus *Rachispoda* LIOY, with 6 new species). Their study brought to the fore problems concerning the terminology of the genitalia, mainly those of the males. In their fundamental work on the external morphology of Sphaerocerids, KIM and COOK (1966) have apparently clarified problems of terminology: indeed, I also have used their terms so far. However, I had to recognize that the terms suggested by them cannot be upheld. Their basic assumption that the genital configuration of every species of the family Sphaeroceridae is of identical structure is surely invalid. Thus, for instance, that the valvula lateralis in the case of *Sphaerocera curvipes* LATR., (and, sensu lato, in that of the subfamilies Sphaerocerinae and Copromyzinae) is indeed homologous with the surstylus used in the other Acalyptrate families, and that the genital structure termed valvula lateralis in the case of the *Rachispoda* species (and in all probability in several other genera of the subfamily Limosininae) is not homologous with the surstylus. On the contrary, the structure called terminal process may equate this latter, although this needs further study. It is also less than satisfactory in KIM and COOK's terminology that the valvula lateralis is a hypopygial appendage, while the valvula medialis is not one. There is no doubt that one needs a new, critical elaboration of the genital morphology of the Sphaeroceridae. I also propose to submit a similar project. However, I chose in the present paper the following, provisional solution. In the case of the *Rachispoda* species, 4 pairs of appendages may be distinguished: two pairs are directly coupled with the hypopygium, in the present paper termed as anterior hypopygial process and posterior hypopygial process (= KIM and COOK's terminal process, in all probability = surstylus sensu auctorum), one pair of aedeagal appendages (= gonites, in the present paper postgonite) — easily identifiable, being the most median of the pairs of appendages — and an additional pair of appendages medially of the anterior hypopygial process (and partly coupled with it) and anterior to the "postgonite", whose origin I have not yet been able to clarify; since in form it often is similar to the "postgonite", I term it pregonite in the present paper.

Except for the paratype of *Limosina dudai* sp. n., the holotype and 12 paratypes of *Limosina ghaznavi* sp. n., all the type-specimens of the new species are deposited and preserved in the Zoological Department of the Hungarian

Natural History Museum, Budapest. Since about four-fifths of my material is preserved in alcohol, the great majority of the type-specimens is also conserved similarly.

I am indebted, and wish to express my gratitude, to H. SCHUMANN (Museum für Naturkunde, Berlin), J. L. STEHLÍK and P. LAUTERER (Moravské Museum, Brno), for the loan of material, and to J. ROHÁČEK (Slezské Muzeum, Opava), for having helped in my work by the prepublicatory submission of his research results concerning the species-group *Limosina fucata*.

The material studied is submitted in the taxonomical order of sequence. The distribution data of the 12 most frequent species are compiled in a table (Table I).

**Sphaerocera curvipes** LATREILLE, 1805. — 1 ♂, 1 ♀: Prov. Kabul, Paghman, 2500 m, 5 May, 1974 (No. 76). A coprophagous, cosmopolitan species. Known also from Afghanistan (RICHARDS, 1962).

**Ischiolepta pusilla** (FALLÉN, 1820). — Prov. Kabul, 1 ♀: Paghman Mountains, 7 km SE from Paghman, 2850 m, 15 May–26 May, 1974 (No. 131); 1 ♀: Kabul, Aliabad, 1800 m, 1–2 June, 1974 (No. 143); Prov. Nangarhar: 1 ♂: Band-e Darunta, 590 m, 8 May, 1974 (No. 86). Now almost a cosmopolitan species. It is spreading by human activities, since it develops in dung heaps and droppings of large hoofers. New to Afghanistan.

**Ischiolepta scabricula** (HALIDAY, 1836). — Prov. Nangarhar: 1 ♀: Khayrokhel, 20 km W from Hydroelectric Plant of Band-e Darunta, 670 m, 8 May, 1974 (No. 87). A very rare but widespread species, known from Europe, in Africa from Ghana to Tanzania; in the collection of the HHNM there is a specimen also from India. New to Afghanistan.

**Lotobia pallidiventris** (MEIGEN, 1830). — Prov. Kabul: 1 ♀: Kareze Mir, 15 km NW from Kabul city centre, 1950 m, 28 May, 1974 (No. 138); Prov. Kandahar: 2 ♂: Kandahar, 1000 m, 23 May, 1974 (No. 129). An Old World species, known also from Afghanistan (RICHARDS, 1962, HACKMAN, 1969).

**Copromyza (Olinea) atra** (MEIGEN, 1830). — For locality data see Table I. A common Holarctic coprophagous species; former records from Afghanistan by RICHARDS (1962).

**Copromyza (Crumomyia) nigra** (MEIGEN, 1830). — Prov. Kabul: 1 ♂: Paghman, 2500 m, 5 May, 1974 (No. 76). Known from Europe, the Faroes, Iceland, West Greenland, New to the Asian part of the Palearctic Region and to Afghanistan.

**Copromyza (Borborillus) niveipennis** (DUDA, 1923). — Prov. Kabul: 3 ♂, 5 ♀: Aliabad, 1850–1920 m, 3 April, 1974 (No. 9); 1 ♂, 2 ♀: ibid. (No. 10); 1 ♀ ibid., 4 May, 1974 (No. 74); 1 ♂, 1 ♀: Band-e Qargha, 2000–2100 m, 12 April, 1974 (No. 29); 1 ♂: Estalef, 2000 m, 15 April, 1974 (No. 32); 1 ♂: Paghman river, 16 km W from Kabul city centre, 1850 m, 1 May, 1974 (No. 62); 6 ♂, 5 ♀: ibid. (No. 63); 1 ♀: Paghman Mountains, 6 km SW from Paghman, 2700–2950 m, 5 May, 1974 (No. 77); Prov. Paktya: 2 ♀: 21 km N from Gardez, Tera Kotal, 2800 m, 14 May, 1974 (No. 97). Described from Iran and known from the Mediterranean Subregion, also from Afghanistan (RICHARDS, 1962, HACKMAN, 1969).

**Ceroptera rubricornis** (DUDA, 1918). — Prov. Kabul: 1 ♂ (No. 40); 1 ♀ (No. 63) (see PAPP, 1977). It seems an endemic species in Turkestan and Afghanistan.

**Ceroptera rufitarsis** (MEIGEN, 1830). — Prov. Kabul: 1 ♂ (No. 40); 1 ♂ (No. 109) (see PAPP, 1977). It was recorded as new to the fauna of Afghanistan from this material. I studied in the collection of the Moravské Museum *C. rubricornis* (DUDA) specimens which had been identified by HACKMAN (1969), and I found one male specimen of *rufitarsis* (MEIG.) among them (1 ♂: Prov. Herat, Bala Murghab, 20. 3.–3. 7. 1964, 470 m, coll. O. JAKŠ).

**Coproica acutangula** (ZETTERSTEDT, 1847). — Prov. Kandahar: 1 ♀: Kandahar, 1000 m, 23 May, 1974 (No. 129). Known from the Holarctic and Ethiopian Regions and from Hawaii, also from Afghanistan (RICHARDS, 1962).



Table I

Afghanistan April—June, 1974 leg. L. PAPP		<i>C. (Olinea)</i> <i>atra</i> MEIG.	<i>Coproica fer-</i> <i>ruginata</i> STENH.	<i>Coproica</i> <i>hirtula</i> ROSD.	<i>Coproica</i> <i>lugubris</i> HAL.	<i>Coproica</i> <i>vagus</i> HAL.
Prov.	No.					
Kabul	8					1/—
	9		2/1	—/1		10/14
	17	—/1				
	25					1/—
	28					—/1
	44		1/—			2/3
	46		2/2			2/2
	47	2/1	1/—			1/2
	54					
	59		1/1			6/7
	60					301/194
	61			1/—	6/3	36/15
	62				—/1	1/2
	63		1/—			7/16
	69					2/1
	70					2/—
	71	40/5				
	72					
	73					2/4
	74				—/1	101/131
	75	1/—				
	76	118/28	1/1*			
	77	2/—				1/1
	80		1/1		—/1	81/70
	89					
	90	1/—		1/—	3/—	3/3
	92			—/1		
	100					
	106					3/6
	107		1/—	8/9		29/27
	108		—/2	—/1		8/12
	130					
	138				1/—	
	142					—/1
	143	1/3			1/7	—/2
	144				1/1	—/3
	148					
	149					10/13
	153					
	159	—/1				
	160					
	163					
Parwan	30		12/16			31/23
Balkh	51					
Herat	110				2/2	
	112					
	114					25/49
	115					1/—
	119					2/—
	120					1/1
Kandahar	121					
	126					

Table I

<i>Limosina</i> <i>bifrons</i> STENH.	<i>Limosina</i> <i>crassimana</i> HAL.	<i>Limosina</i> <i>heteroneura</i> HAL.	<i>Limosina</i> <i>ochripes</i> MEIG.	<i>Leptoena</i> cur- virens STENH.	<i>L. (Rachispoda)</i> <i>fuscipennis</i> HAL.	<i>L.</i> ( <i>Rachispoda</i> ) <i>modesta</i> DUDA
				13/1		5/—
				9/—		
1/—	1/1		2/—	—/1		
—/1	—/1			11/5		
				6/2		
—/		1/—		1/—	2/1	1/1
				1/4		
	58/7					
				1/—		
—/1			3/—	27/21		6/6
	—/1		1/—	9/3		
	27/13		—/2	9/2		
2/—	—/1		1/—	1/1		2/3
			1/—	2/6		
				1/—		
		1/—		4/3		
				5/4		
		1/—	1/—	2/1	21/11	24/21
—/1				—/1		
			—/1	3/—		
			1/1	1/2		
—/2	—/3	—/1	—/1	55/37		1/—
				38/12	4/8	23/21
		—/1		12/11		—/1
1/1		1/—		8/4	19/13	126/105
					1/—	7/6
				18/18		5/5
				1/—		
2/1				2/2		9/7
		—/1		—/1		—/1
		4/—		48/21		4/3
		—/1				—/1
		18/26		108/60		1/—
		1/1		2/2		
		—/1		3/3	—/1	50/27



Table I (continued)

Afghanistan April—June, 1974 leg. L. PAPP		<i>C. (Olinea)</i> <i>atra</i> MEIG.	<i>Coprocera fer-</i> <i>ruginata</i> STENH.	<i>Coprocera</i> <i>hirtula</i> ROND.	<i>Coprocera</i> <i>lugubris</i> HAL.	<i>Coprocera</i> <i>vagens</i> HAL.
Prov.	No.					
	127					
	128					
	129				3/40	
Ghazni	146					
	147					1/—
Paktya	93					—/2
	155					
Nangarhar	36					
	37					1/—
	83					
	85			—/1		
	87		6/4	88/86		15/7
	86		3/—	46/36	7/9	1/—
Total		204	60	279	89	1300
Cattle farms:						
Bini Hesar	91		29	39	2	11343
	140		72	60	5	8403
Kareze Mir	136					4

\* 76a.

***Coprocera digitata*** (DUDA, 1918). — Prov. Nangarhar: 3 ♂, 9 ♀: Band-e Darunta, 590 m, 8 May, 1974 (No. 86). An interesting, little known species. Distribution: Yugoslavia, Hungary, Tunis, Egypt. New to the Asian part of the Palearctic Region and to Afghanistan.

***Coprocera ferruginata*** (STENHAMMAR, 1854). — Locality data: Table I. A widespread species, it was found in every continent and on many Pacific and Atlantic islands, but new to Afghanistan although one of the most commonest sphaerocerid species there.

***Coprocera hirtula*** (RONDANI, 1880). — Table I. Found in every continent. Partly coprophagous, but it has a very wide ecological valency. New to Afghanistan.

***Coprocera lugubris*** (HALIDAY, 1836). — Table I. Published occurrence data only from Europe. It develops in donkey, horse, and cattle droppings. First records from Afghanistan by RICHARDS (1962). It is rather common there.

***Coprocera pseudolugubris*** (DUDA, 1923). — Prov. Kabul: 1 ♀: Paghman, 2500 m, 5 May, 1974 (No. 76). A rare coprophagous species. Proved occurrence data from Europe and Mongolia (cf. PAPP, 1973). New to Afghanistan.

***Coprocera vagans*** (HALIDAY, 1833). — Table I. An almost cosmopolitan coprophagous species. Known also from Afghanistan (RICHARDS, 1962). It is the commonest sphaerocerid species there.

***Elachisoma aterrimum*** (HALIDAY, 1833). — Prov. Kabul: 1 ♂, 1 ♀: Kabul, 1780 m, 29 April, 1974 (No. 59); 1 ♀: same place, 6 May, 1974 (No. 80); 1 ♀: Bini Hesar, 6 km SE from Kabul city centre, State farm, 1820 m, 12 May, 1974 (No. 91b); 1 ♂: Kabul, Aliabad, 13 June, 1974 (No. 148); Prov. Nangarhar: 2 ♂: Band-e Darunta, 590 m, 8 May, 1974 (No. 86). Distribution: West Palearctic and Ethiopian Regions. New to Afghanistan.

***Elachisoma pilosum*** (DUDA, 1924). — Prov. Kabul: 1 ♀: Kabul, Aliabad, 1800 m, 1—2 June, 1974 (No. 143). It was known only from Europe; new to the Asiatic part of the Palearctic Region and to Afghanistan. A rare coprobiont species.

Table I (continued)

<i>Limosina bifrons</i> STENH.	<i>Limosina crassimana</i> HAL.	<i>Limosina heteroneura</i> HAL.	<i>Limosina ochripes</i> MEIG.	<i>Lepocera curvicauda</i> STENH.	<i>L. (Rachispoda) fuscipennis</i> HAL.	<i>L. (Rachispoda) modesta</i> DUDA
4/1 —/1		—/1  4/3		1/—  8/3  6/4 3/— 10/9 1/1  1/2	1/2	—/1 2/5  7/4  2/1  3/—  4/6
20	113	67	15	678	87	507

**Trachypella atoma** (RONDANI, 1880). — Prov. Nangarhar: 1 ♂: Band-e Darunta, 590 m, 8 May, 1974 (No. 86); Prov. Kabul: 1 ♂, 1 ♀: Paghman river, 16 km W from Kabul city centre, 1850 m, 10 May, 1974 (No. 90); 2 ♀: Bini Hesar lake, 5 km SE from Kabul city, 1780 m, 17 May, 1974 (No. 106); 1 ♂, 2 ♀: Bini Hesar, State Farm, 1820 m, 1 June, 1974 (No. 140b); 1 ♂, 1 ♀: Kabul, Aliabad, 1800 m, 1–2 June, 1974 (No. 143); 1 ♀: *ibid.*, 13 June, 1974 (No. 149). Distribution: Europe, Canaries, Madeira, Congo, Mariana Is., Hawaii. New to Afghanistan. The specimens were identified on basis of the genital structures.

**Trachypella leucoptera** (HALIDAY, 1856). — Prov. Nangarhar: 1 ♂: Khayrokhel, 20 km W from Hydroelectric Plant of Band-e Darunta, 670 m, 8 May, 1974 (No. 87). Known from the Palearctic and Ethiopian Regions, new to Afghanistan.

**Halidayina spinipennis** (HALIDAY, 1836). — Prov. Kabul: 2 ♂, 3 ♀: Paghman, 2500 m, 5 May, 1974 (No. 76); 1 ♂: *ibid.* (No. 76a); Prov. Nangarhar: 1 ♂: Band-e Darunta, 590 m, 8 May, 1974 (No. 86). A Palearctic coprophagous species. New to Afghanistan.

**Philocoprella italica** DEEMING, 1964. — Prov. Kabul: 1 ♂: Paghman river, 16 km W from Kabul city centre, 1850 m, 1 May, 1974 (No. 62). A very rare Palearctic coprophagous species. Distribution: Italy, Hungary, Mongolia, Afghanistan (new).

**Chaetopodella scutellaris** (HALIDAY, 1836). — Prov. Kabul: 1 ♂: Kabul, Aliabad, 1800 m, 20–21 April, 1974 (No. 47); 1 ♂: Kabul, Darulaman, 1820 m, 3 May, 1974 (No. 71); 45 ♂, 5 ♀: Paghman, 2500 m, 5 May, 1974 (No. 76); 2 ♂: Kabul, Aliabad, 1800 m, 1–2 June, 1974 (No. 143); Prov. Nangarhar: 1 ♀: Jalalabad, 560 m, 8 May, 1974 (No. 83). A Palearctic and Ethiopian species, developing in droppings of large mammals. New to Afghanistan.

**Limosina albinervis** DUDA, 1918. — Prov. Kabul: 2 ♂: Bini Hesar, State Farm, 1820 m, 1 June, 1974 (No. 140b). Distribution: Germany, Hungary, Palestine, Afghanistan (new). It was identified by the genital structures.

**Limosina bifrons** STENHAMMAR, 1854. — Table I. Common on dung heaps and on other kinds of manure. Distribution: Europe, S. Africa, Seychelles, Canaries, the Azores, Philippine Is., Samoa, Hawaii, Afghanistan (new).



***Limosina brevicostata*** DUDA, 1918. — Prov. Herat: 1 ♂: Hari Rud river, about 8 km SW Herat, 950 m, 20 May, 1974 (No. 111); 1 ♀: Herat, 6 km SW from city centre, 980 m, 20 May, 1974 (No. 112); 1 ♂: *ibid.* (No. 113); 2 ♀: Hari Rud river, about 15 km SE from Herat city centre, 950 m, 21 May, 1974 (No. 120); Prov. Nangarhar: 1 ♂: Jalalabad, 560 m, 8 May, 1974 (No. 83); 1 ♀: *ibid.*, 580 m (No. 85); 1 ♂: Band-e Darunta, 590 m, 8 May, 1974 (No. 86). Distribution: Europe to Caucasus, North Africa, Atlantic islands near Africa, Nepal, Afghanistan (new) (cf. RICHARDS, 1973).

***Limosina crassimana*** HALIDAY, 1836. — Table I. I regard the name *Borborus clunipes* MEIGEN, 1830, as very doubtful, thus I use HALIDAY's name (cf. DUDA, 1938). It is a Holarctic species with a wide ecological valence. Its occurrence data from the Ethiopian Region need confirmation. New to Afghanistan.

### ***Limosina dudai* sp. n.**

A bright yellow species, only subalar callus on pteropleuron and a small part each of pronotum and mid coxae light brown and tip a third antennal joint a diffuse light brown. Head length/height ratio = 5/6. Genae moderately wide, but strongly widening posteriorad. One pair each of strong *oc*, *vte*, *vti* bristles. Hind upper orbitals much longer and thicker than anterior upper orbitals; rather long outer and inner occipitals but no postverticals (only 1 pair of short thin hairs in their position). 4 pairs of short and thin *if*. Vibrissae subcruciate but genal and peristomal bristles rather weak. Second antennal joint with a ring of strong bristles. Third joint reniform with short pilosity. Arista with moderately long pubescence. Palpi with 2 rather strong bristles. Thoracic chaetotaxy: 1 *h*, 1 *np*, 1 *prst*, 1 *pra*, 1 *sa*, 1 *pa*, 2 *dc*, 1 *prsc*, 2 *sc*, 1 *st* pairs of bristles. Anterior *dc* much shorter than posterior, latter rather far removed from scutellum, *prsc* in about half length of posterior *dc*. Thoracic microchaetae scattered, but comparatively strong. Femora rather thick, mid femur with an anteral preapical thorn and with a shorter, more basally placed bristle. Mid tibia with a weak *ad* at 12/45, a strong *ad* at 16/45, more anteral, moderately strong bristle at 32/45, very strong bristle in almost dorsal position at 7/9, strong *pd* at 34/45, and strong anteroapical and ventroapical bristles. *mt*<sub>2</sub> as long as second and third joints combined. Wing length: holotype ♂: 1.30 mm, paratype ♀: 1.71 mm, wing width: holotype ♂: 0.61 mm, paratype ♀: 0.75 mm, *c*<sub>x</sub> = 0.82, *m*<sub>x</sub> = 2.2. Costal vein with dense, but rather thin bristles on *mg*<sub>1</sub>, *r*<sub>4+5</sub> straight. Discal cell angulate with a short vein appendage. Alula very small and narrow. Halteres yellow. Male pregenital sternite dark brown, narrow and very short with a row of black spinules. Inner genital structures not studied. Female cerci with two pairs of moderately long, but comparatively thick straight bristles.

Length of body: holotype ♂: 1.63 mm, paratype ♀: 1.81 mm.

Holotype male: Afghanistan, Prov. Nangarhar, Band-e Darunta, 590 m, 8 May, 1974, netted on lake-shore vegetation of storage lake, leg. L. PAPP (deposited in HNHM). Paratype female: Sumatra, Fort de Kock, 920 m, leg. E. JACOBSON, "*S. flava* n. sp." (O. DUDAS handwriting) (deposited in the Zoologisches Museum, Museum f. Naturkunde, Berlin). *S[cotophilella] flava* is a MS name of DUDA.

*L. dudai* sp. n. belongs in all probability to the *L. penetralis* species-group (vein  $r_{4+5}$  straight, alula narrow, also armature of  $t_2$  similar to that of the *penetralis*-group). Its bright yellow colour delimits this new species from the other known congeners. It is obviously an Oriental species. The locality of the holotype is likely the westernmost occurrence of the species.

***Limosina flavipes*** (MEIGEN, 1830). — Prov. Kabul: 1 ♂: Kabul, Hotel Jamil, 30 April, 1974 (No. 1a). A widespread species with little known distribution (Europe, North Africa, Canaries, Juan Fernandez Is., New Zealand, Australia). New to Afghanistan.

***Limosina fungicola*** HALIDAY, 1836. — Prov. Paktya: 2 ♀: 22 km SE from Gardez, 2450–2500 m, 14 May–15 June, 1974 (No. 155). Although all its body characters agree with European specimens of *fungicola*, I identified them with some doubt, as only the male genital characteristics give a sufficient base for identification in this species-group. New to Afghanistan.

### ***Limosina ghaznavi* sp. n.**

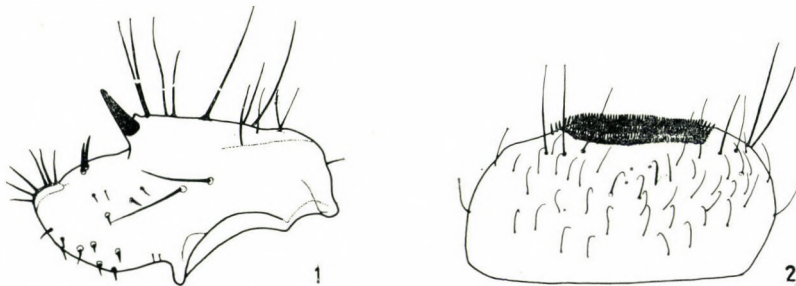
A dark greyish brown species, pleurae, fore coxa, knees and apices of tibiae with some yellow to yellowish brown hue. Head twice higher than long, eyes small, their longest diameter only twice longer than smallest genal width. Head bristles strong, inner occipitals nearly cruciate. Four pairs of small *if*. Cilia on third antennal joint longer than pubescence of arista (latter about 0.015 mm long), arista longer than mesonotum. Vibrissae strong, but genal and peristomal bristles short and thin. Thorax comparatively small, thoracic chaetotaxy: 1 *h*, 1 *np*, 1 *prst*, 2 *sa*, 1 *pa*, 2 *dc*, 0 *prsc*, 2 *sc* (prescutellar *acmi* only 1/5 as long as posterior *dc* pair). Tibiae and tarsi long. First tibia of males not thickened and its anteroventral side not excised,  $mt_1$  and fore tarsal joints not widening. Armature of mid tibia: anterodorsals: at 1/4 medium-size, at 19/60 strong, at 43/60 medium-size, more dorsally at 47/60 small, at 5/6 very strong bristle; at 4/5 very strong posterodorsal bristle. Mid metatarsus long and thin, 1.68 times longer than second joint. Wing length: holotype ♂ (not precisely measurable owing to poor condition of wing): about 2.0 mm, paratypes: 1.72–2.55 mm, width: holotype ♂: 0.90 mm, paratypes: 0.72–1.01 mm. Wings rather long, alula long, wide and rounded, wider than that of *penetralis* COLL., but narrower than in *crassimana* HAL. Veins as in other species of *crassimana* species-group. Knob of halteres black, stalk yellowish brown. Male fifth sternite (Fig. 2) rather peculiar: small black spinules covering a very wide section of its mediocaudal part, and spinules at least in three rows. Fifth sternite medially with fishing-hook-like longer bristles. Male surstylus (Fig. 1) rather wide, apical part wider than basal part, its thorn rather short, hind margin with comparatively few bristles. Female cerci with short and moderately long hairs only.

Body-length: holotype ♂: 2.02 mm, paratypes: 1.80–2.25 mm.



Holotype male: Holzak, 3000 m, 6. 8. 1964, aus Bau von *Marmota caudata* — SO. Afghanistan, Prov. Ghazni (Collectio Moravské Muzeum, Brno). Paratypes: 4 ♂, 12 ♀; data as for holotype. (1 ♂, 3 ♀ paratypes in HHNM, other in Brno.)

*L. ghaznavi* sp. n. belongs to the *crassimana-penetralis* species-group. I believe that it is nearer to *luteilabris* ROND. and *penetralis* COLL., as mid tibial bristles similar to those of *luteilabris* and *penetralis*, and male fore tibia



Figs. 1—2. *Limosina ghaznavi* sp. n., paratype male. 1 = surstylus in lateral view, 2 = fifth sternite

not thickened and not excised. The armature of male fifth sternite and shape and bristles of surstyli give a good base in separating the new species from its congeners. Its small thorax shows that in all probability this species, living in nests of *Marmota caudata*, is unable to fly.

***Limosina heteroneura* HALIDAY, 1836.** — Table I. A widespread species with wide ecological valence. Known also from Afghanistan (RICHARDS, 1962, HACKMAN, 1969).

***Limosina macedonica* ROHÁČEK, 1978.** — Prov. Kabul: 2 ♀: Paghman river, 16 km W from Kabul city centre, 1850 m, 1 May, 1974 (No. 62); 2 ♂: *ibid.* (No. 63) (PAPP, 1976: as *fucata* ROND., misident.); 1 ♀: Pul-e Charkhi, 22 km ENE from Kabul city centre, 1780 m, 2 May, 1974 (No. 70) (see PAPP, 1976). Recently described from Yugoslavia and from Iran (ROHÁČEK, 1978). New to Afghanistan.

***Limosina ochripes* (MEIGEN, 1830).** — Table I. A Holarctic species, new to Afghanistan.

***Limosina paralbivervis* L. PAPP, 1973.** — Prov. Herat, 1 ♀: Hari Rud river, about 15 km SE from Herat city centre, 950 m, 21 May, 1974 (No. 120); Prov. Kandahar: 2 ♂, 3 ♀: Arghandab river, 5 km from Kandahar, 1000 m, 23 May, 1974 (No. 126). Hitherto known only from Mongolia. It was identified by body and outer genital characteristics. New to Afghanistan.

***Limosina penetralis* COLLIN, 1925.** — Prov. Kabul: 1 ♂, 1 ♀: Kabul, Aliabad, 1800 m, 3—4 April, 1974 (No. 8); 1 ♀: Kabul, Darulaman, 1820 m, 9 April, 1974 (No. 17); 1 ♀: *ibid.*, 3 May, 1974 (No. 72); 2 ♂, 1 ♀: Kabul, Aliabad, 1800 m, 28 April, 1974 (No. 54); 1 ♀: *ibid.*, 1—2 June (No. 143); 1 ♂: Tsemtala, 10 km NW from Kabul city centre, 1800 m, 18 May, 1974 (No. 108); Prov. Herat: 1 ♀: Hari Rud river, about 15 km Herat city centre, 950 m, 21 May, 1974 (No. 119); 2 ♂, 3 ♀: *ibid.* (No. 120); Prov. Paktya: 1 ♀: 22 km SE from Gardez, 2450—2500 m, 14 May—15 June, 1974 (No. 155). Their identification was made on the basis of genital structures. A Palearctic species, known also from Afghanistan (RICHARDS, 1962, HACKMAN, 1969: as sp. ? *penetralis* RICHARDS).

***Limosina pteromoides* L. PAPP, 1973.** — Prov. Kabul: 1 ♂: Paghman, 2500 m, 5 May, 1974 (No. 76); 1 ♂, 1 ♀: Pul-e Charkhi, 22 km ENE from Kabul city centre, 1780 m, 2 June, 1974 (No. 144). Described from Mongolia. The specimens from Afghanistan agree completely with the types. New to Afghanistan.

***Limosina rohaceki* sp. n.**

A uniformly blackish-brown species. Head (Fig. 3) much higher than long, head bristles short, *oc*, *vte*, *vti* rather thick, but *ors* weak. 4 pairs of short and thin *if*. Face with a remarkable protuberance between antennae. Antennal foveae rather deep and bright. Mouth edge protruding. Vibrissae strong, but genal and peristomal bristles weak. Tip of third antennal joint and arista with about 0.02 mm long pubescence. Eyes rather small, their longest diameter only 1.7 times longer than smallest genal width. Thoracic chaetotaxy as in species of the *fucata*-group, all thoracic bristles comparatively short but thick, only 1 pair of strong *dc*, scutellum only 3/5 as long as wide. Legs uniformly blackish brown, even knees not paler. Mid tibia with a strong ventroapical bristle; its other bristles: anterodorsals: a strong at 1/3, a shorter at 2/3; very strong dorsal at 5/6 of tibia. Mid basitarsus rather long, exactly twice longer than second joint, without stronger bristles. Wing length: 1.72 mm, width 0.78 mm. Veins dark brown, costa reaches over  $r_{4+5}$ ,  $r_{4+5}$  in its apical 2/5 straight.  $r_{2+3}$  much strongly upcurving than in *altimontana* ROHÁČEK, 1978, and ending at about 75° angle in costa.  $c_x = 1.00$ .  $t_a - t_p/t_p = 2.0$ . Discal cell with only a stub-like vein appendage without thin colourless continuation. Alula very small and nearly pointed. Halteres black. Female abdomen shiny, only very finely punctate. Female cerci short and wide with two pairs of long, comparatively thin, wavyly curving hairs and some shorter, straight hairs.

Body length of holotype ♀: 1.36 mm.

Holotype female: Afghanistan, Prov. Kabul: Tsheheltan, 17 km WSW from Kabul. 1950 m, 19 April, 1974, leg. L. PAPP (No. 46) (Netted above old decomposed dung heaps).

I dedicate this new species to my friend, JINDŘICH ROHÁČEK (Slezské Muzeum, Opava), who has achieved excellent results in the taxonomy and morphology of the *Limosina fucata* species-group.

*L. rohaceki* sp. n. is nearest to *L. altimontana* ROHÁČEK, 1978, but contrarily to that species its genae are completely black, its head in profile and face different since antennal foveae deeper than in *altimontana*, its  $r_{2+3}$  vein subtends a larger angle in costa and its discal cell holds only a very short stub-like vein appendage instead of a longer colourless vein attenuating posteriorad (cf. ROHÁČEK, 1978).

***Limosina vitripennis* ZETTERSTEDT, 1847.** — Prov. Kabul: 7 ♂, 2 ♀: Kabul, Darulaman, 1820 m, 9 April, 1974 (No. 17); 2 ♂: ibid., 3 May (No. 72); 2 ♂: Paghman, 2500 m, 5 May, 1974 (No. 76); 2 ♂: Kabul, Aliabad, 1800 m, 20–21 April, 1974 (No. 47); 1 ♀: ibid., 1–2 June (No. 143). Distribution: Europe, Mongolia, Afghanistan (HACKMAN, 1969).

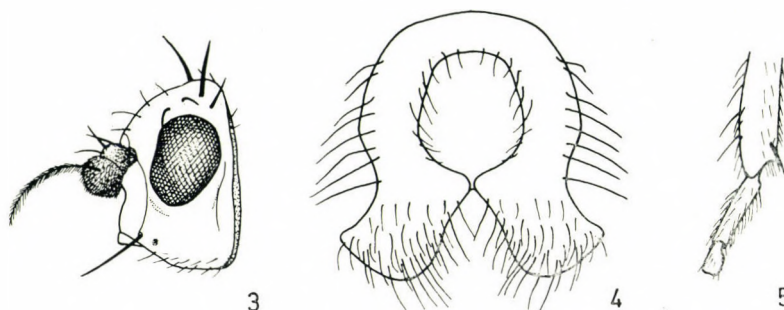
***Leptocera (Opacifrons) coxata* (STENHAMMAR, 1854).** — Prov. Parwan: 1 ♂: Estalef, 1950 m, 15 April, 1974 (No. 31); Prov. Herat: 1 ♂: Herat, 6 km SW from city centre, 980 m, 20 May, 1974 (No. 112); Prov. Kabul: 1 ♀: Paghman river, 16 km W from Kabul city centre, 1850 m, 1 May, 1974 (No. 62); 1 ♂: Bini Hesar, State Farm, 1820 m, 12 May, 1974 (No. 91b); 1 ♀: Pule Charkhi, 22–24 km ENE from Kabul city centre, 1780 m, 19 June, 1974 (No. 163); 1 ♀: Bini Hesar lake, 5 km SE from Kabul city, 1780 m, 17 May, 1974 (No. 106); 2 ♂, 1 ♀: Kabul, Aliabad, 1800 m, 13 June, 1974 (No. 149). Known from the Old World and from North America; first Afghanian record by HACKMAN (1969).



**Leptocera (Opacifrons) humida** (HALIDAY, 1836). — Prov. Kabul: 5 ♂, 1 ♀: Bini Hesar, State Farm, 1820 m, 12 May, 1974 (No. 91b); 1 ♂, 1 ♀: Kabul, Aliabad, 1800 m, 13 June, 1974 (No. 149). Proved occurrence data from the Palearctic Region only. New to Afghanistan.

**L. (Leptocera) curvinervis** (STENHAMMAR, 1854). — Table I. One of the commonest sphaerocerid species in Afghanistan. A widespread Old World species (Afghanian records by RICHARDS, 1962, and HACKMAN, 1969); developing in mud.

**Leptocera (Rachispoda) acrosticalis** (BECKER, 1903). — Prov. Kabul: 1 ♀: Pul-e Charkhi, 22 km ENE from Kabul city centre, 1780 m, 2 June, 1974 (No. 144). A very interesting species. Distribution: Cape Verde Is., Canaries, Egypt, Madagascar, Seychelles. New to Eurasia.



Figs. 3–5. 3 = *Limosina rohaceki* sp. n., head of holotype female in profile; 4–5 = *Leptocera (Rachispoda) afghanica* sp. n.: 4 = hypopygium and posterior hypopygial process of paratype male in caudal view, 5 = end of fore tibia, outer view

### **Leptocera (Rachispoda) afghanica** sp. n.

A brownish grey to silvery grey species. Head nearly as long as high. Eyes big, elongately elliptic, nearly transverse. Arista with shorter pubescence (about 0.02 mm long) than that of third antennal joint. Five pairs of *dc*, *acmi* uniformly short, no median row of *acmi*, four pairs of *sc* on margin of scutellum. Legs with brownish grey femora, other parts ochreous yellow to light brown. First tibia (Fig. 5) with a strong ventral subapical bristle, similar to that in *L. (R.) vaporariorum* STROBL, but longer, at least as long as half of first metatarsus. Hind coxae ventrally with short, thick, black thornlets, as in other species of the *lutosa*-group. Hind tibia with strong, black subapical ventral spur. Wing length: holotype ♂: 2.12 mm, paratype ♂: 2.28 mm, width: holotype ♂: 0.92 mm, paratype ♂: 0.97 mm, thus wings broad, veins light brown,  $r_{4+5}$  only slightly upcurving,  $c_x = 1.66$ ,  $t_a - t_p/t_p = 3.0$ . Lower edge of discal cell slightly rounded without a vein appendage. Male hypopygium comparatively long. Posterior hypopygial process (surstylus) very wide (Fig. 4) and as hypopygium, covered with long, but thin hairs. Postgonite also very characteristic, fully straight, attenuating apically, but with blunt apex.

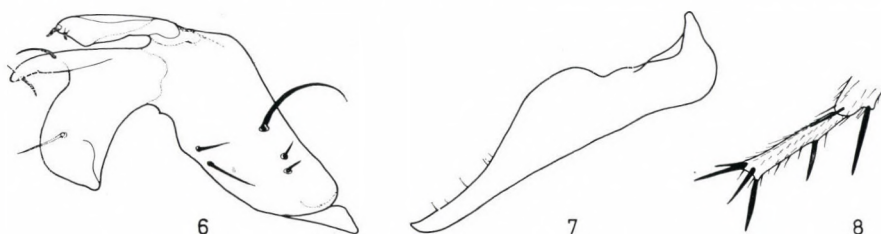
Body length of holotype ♂: 2.54 mm, of paratype ♂: 2.68 mm.

Holotype male: Afghanistan, Prov. Kandahar, Arghandab river, 5 km from Kandahar, 1000 m, 23 May, 1974, leg. L. PAPP (No. 126). Paratype male: Prov. Ghazni, 2 km SE from Moqur, 1970 m, 3 June, 1974 (No. 146).

*L. (R.) afghanica* sp. n. belongs to the *lutosa* species-group, but its strong preapical ventral bristles on first and hind tibiae and its genital characteristics (very wide and hairy posterior hypopygial process, straight blunt postgonite) give an easy separation from the other species of the *lutosa*-group.

***Leptocera (Rachispoda) ariana* sp. n.**

A greyish brown species with some silvery pollen. Head nearly as long as high. 3 pairs of strong *if*, 1 pair of smaller posterior *if*. Arista comparatively finely pubescent. 5 pairs of *dc* bristles, *acmi* uniformly short, no median *acmi*



Figs. 6–8. 6–7 = *Leptocera (Rachispoda) ariana* sp. n., paratype male: 6 = anterior hypopygial process, 7 = postgonite; 8 = *L. (Rachispoda) meges* sp. n., mid metatarsus posteriorly

row. 4 pairs of marginal *sc*. Legs yellow, only femora brownish. First and hind tibiae with black, thick, ventral preapical bristles, but these bristles much smaller than in *afghanica* sp. n. Hind coxae with short, thick, black thornlets ventrally as in other species of the *lutosa*-group. Wing length: holotype ♂: 1.84 mm, paratypes: 1.81–2.02 mm, wing width: holotype ♂: 0.86 mm, paratypes: 0.79–0.87 mm.  $c_x = 1.56$ ,  $t_a - t_p/t_p =$  about 3.5, discal cell with rounded hind corner and without vein appendage. Veins light brown. Halteres yellowish white. Male 5th sternite symmetrical with a wide mediocaudal projection (Fig. 9), sides with some very strong and long bristles. Fourth and fifth tergites with two pairs each of thick and long bristles (Fig. 13). Fifth sternite very small and, excepting these two pairs of bristles, almost bare. Hypopygium ventrally elongated (Fig. 10), posterior hypopygial process wide and together with hypopygium with dense long bristles. Anterior hypopygial process (Fig. 6) very difficult to describe, with a wide medial process and a complicated caudal and lateral process each. Postgonite (Fig. 7) long with an anteriorly placed apex, but almost bare. Female supraanal plate with only some thin, colourless hairs, ventral side of margin of subanal plate with 3 pairs of short, but strong postero-ventrally directed bristles.

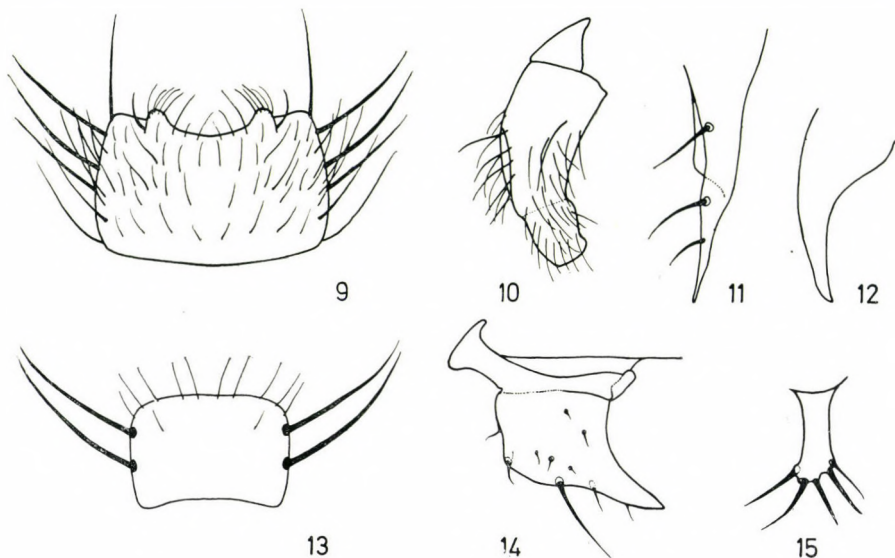
Body-length: holotype ♂: 2.26 mm, paratypes: 2.00–2.40 mm.

Holotype male: Afghanistan, Prov. Kandahar, Arghandab river, 5 km Kandahar, 1000 m, 23 May, 1974, leg. L. PAPP (No. 126). Paratypes: 11 ♂: data as for holotype; Prov. Ghazni: 2 ♂, 4 ♀: 2 km SE from Moqur, 1970 m, 3 June, 1974 (No. 146); Prov. Nangarhar: 2 ♂: Band-e Darunta, 590 m, 8 May, 1974 (No. 86); Prov. Kabul: 1 ♀: Kabul, Aliabad, 1800 m, 13 June, 1974 (No. 149).



*L. (R.) ariana* sp. n. belongs to the *L. (R.) lutosa* species-group, but its yellow legs and male genital structures are so characteristic that it can be regarded as an easily identifiable species.

**Leptocera (Rachispoda) duodecimseta** L. PAPP, 1973 [= *L. (Rachispoda)* sp. pr. *tuberosa* DUDA, HACKMAN, 1969]. — Prov. Kabul: 4 ♂, 3 ♀: Pul-e Charkhi, 22 km ENE from Kabul city centre, 1780 m, 2 May, 1974 (No. 69); 3 ♂, 2 ♀: *ibid.*, 2 June (No. 144); Prov. Kandahar:



Figs. 9–15. — 9–10 = *Leptocera (Rachispoda) ariana* sp. n., paratype male: 9 = fifth sternite, 10 = hypopygium and posterior hypopygial process in profile; 11–12 = *L. (R.) kabuli* sp. n., paratype male: 11 = posterior hypopygial process in profile, 12 = postgonite; 13 = *L. (R.) ariana* sp. n., male fifth tergite; 14–15 = *L. (R.) kabuli* sp. n., paratype male: 14 = anterior hypopygial process in profile, 15 = pregonite

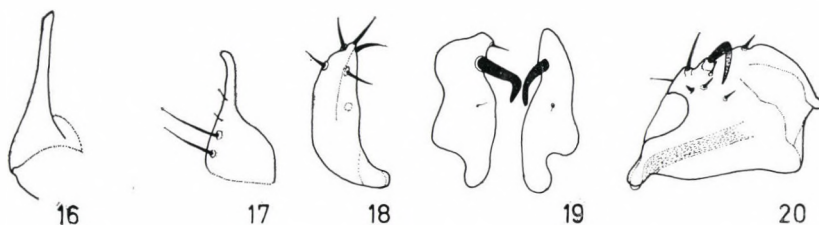
3 ♂, 2 ♀: Arghandab river, 5 km from Kandahar, 1000 m, 23 May, 1974 (No. 126); Prov. Ghazni: 1 ♂, 6 ♀: 2 km SE from Moqur, 1970 m, 3 June, 1974 (No. 146). Collectio Moravské Muzeum, Brno: N. Afghanistan, Prov. Herat, Bala Murghab, 470 m, coll. O. JAKŠ, 1964: 4 ♂, 2 ♀: 1. 5.–15. 5. (16); 1 ♂, 2 ♀: 1. 6.–10. 6. (23); 2 ♀: 20. 6.–24. 6. (30); 1 ♀: 10. 6. (25); 1 ♀: 11. 6.–15. 6. (26). Described from Mongolia, new to Afghanistan. As it seems a common species, not only in Mongolia but also in Afghanistan, in all probability it will be found also in the intervening territories.

**Leptocera (Rachispoda) fuscipennis** (HALIDAY, 1833). — Table I. Distribution: Holarctic and Ethiopian Regions, New Zealand. Recorded also from Afghanistan (RICHARDS, 1962, HACKMAN, 1969).

### *Leptocera (Rachispoda) gel* sp. n.

A dark greyish brown species. Head only 1.15 times higher than long, facial protuberance between antennae very high, but reaching only about lower third of face. Genae rather narrow, its smallest diameter only 1/4 of longest diameter of eye. Arista more than three times longer than antennae, with fine pubescence. Mesonotum with uniformly short *acmi* rows, no median *acmi* row.

3 pairs of sc. Ventral preapical bristle on mid tibia rather long, mid ventral metatarsal bristle also strong, at least  $2/3$  of length of preapical bristle. No posterior apical bristle on mid tibiae. Hind coxae with fine hairs only. Wing length: holotype ♂: 1.45 mm, paratypes: 1.19–1.61 mm, width: holotype ♂: 0.60 mm, paratypes: 0.52–0.72 mm.  $c_x = 1.2$ –1.25,  $t_a - t_p/t_p = 2.14$ –2.37, thus both values very small, veins light brown, along  $r_{2+3}$ ,  $r_{4+5}$  and cross-veins with a diffuse brown hue. Male posterior hypopygial process narrow, but not pointed (Figs. 16, 17), only slightly incurving, pregonite



Figs. 16–20. *Leptocera (Rachispoda) gel* sp. n., paratype male: 16 = posterior hypopygial process in ventral view, 17 = same in profile, 18 = pregonite in profile, 19 = ventral parts of anterior hypopygial processes in ventral view, 20 = anterior hypopygial process in profile

comparatively wide (Fig. 18) with some strong but short bristles. Anterior hypopygial process with a strong, thick, curved ventral incurving spine (Fig. 19, 20). Anterior hypopygial process wide in profile and too complex to allow a good drawing of it (Fig. 20). Female seventh sternite ending in a sharp tip mediocaudally, supraanal plate with fine hairs only.

Body-length: holotype ♂: 1.78 mm, paratypes: 1.59–2.26 mm.

Holotype male: Afghanistan, Prov. Kabul, Bini Hesar lake, 5 km SE from Kabul city, 1780 m, 17 May, 1974, leg. L. PAPP (No. 106). Paratypes: 6 ♂, 3 ♀: data as for holotype; 1 ♀: *ibid.*, 1 June (No. 142); Prov. Herat: 1 ♂, 2 ♀: Hari Rud river, about 8 km SW from Herat, 950 m, 20 May, 1974 (No. 110); Prov. Kabul: 1 ♀: Kabul, Darulaman, 1820 m, 18 June, 1974 (No. 159); 2 ♂, 1 ♀: Kabul, Aliabad, 1800 m, 1–2 June, 1974 (No. 143); 4 ♂, 5 ♀: *ibid.*, 13 June (No. 149).

*L. (R.) gel* sp. n. is an easily identifiable species of the subgenus. Although its females have a pointed seventh sternite, as the species of the *cilifera* species-group, but the head is rather long and its facial protuberance very high. The features of the male genitalia (principally the curved central spine on the anterior hypopygial process) are very characteristic.

***Leptocera (Rachispoda) hostica* VILLENEUVE, 1917.** — Prov. Kabul: 1 ♂: Kabul, 1780 m, 30 April, 1974 (No. 59); 1 ♀: Paghman river, 16 km W from Kabul city centre, 1850 m, 1 May, 1974 (No. 62). Distribution: Europe, Asia Minor, Mongolia. New to Afghanistan.



**Leptocera (Rachispoda) kabuli** sp. n.

A dark brown species. Head more than 1.5 times higher than long. Four *if* pairs: first small, second and third robust, fourth medium-sized. Arista shortly pubescent. Eyes big, longest diameter 4.0 times longer than smallest genal width. Mesonotum with uniformly short *acmi*, no median *acmi* row. Four pairs of *sc*, third pair originating from disc of scutellum, but their distance more than half of scutellar width at base. Hind coxae ventrally with fine hairs only. Wing length: holotype ♂: 1.63 mm, paratypes: 1.45—1.82 mm, width: holotype ♂: 0.69 mm, paratypes: 0.56—0.78 mm. Veins brown; along veins, and mainly along cross-veins, with a distinct yet diffuse brown hue.  $c_x = 1.47$ .  $t_a - t_p/t_p = 2.8-3.2$ . Discal cell angulate with a short brown vein-appendage. Male posterior hypopygial process (Fig. 11) with a long sharp apex and with 3 strong bristles. Pregonite (Fig. 15) short, not strongly chitinized with thick, stiff bristles, postgonite (Fig. 12) slightly curved, simple, anterior hypopygial process (Fig. 14) comparatively simple, with a sharp anterior apex. Female seventh sternite rounded, eighth sternite consisting of four parts; two dorsal parts with comparatively strong bristles caudally. Supraanal plate with small hairs only, subanal plate with a very characteristic, pale caudal hook (Fig. 26). Lateral margins of subanal plate with at least 3 pairs of strong, stiff bristles, eighth sternite very complicated, finely chitinized and caudally to main part with a finely chitinized other plate, possibly a part of sternite 8.

Body-length: holotype ♂: 1.95 mm, paratypes: 1.64—2.40 mm.

Holotype male: Afghanistan, Prov. Kabul, Bini Hesar lake, 5 km SE from Kabul city, 1780 m, 17 May, 1974, leg. L. PAPP (No. 106); paratypes: 38 ♂, 21 ♀: same data as for holotype; 1 ♂, 2 ♀: *ibid.*, 1 June (No. 142); Prov. Kabul: 2 ♂, 2 ♀: Kabul, Aliabad, 1800 m, 13 June, 1974 (No. 149); 1 ♂, 1 ♀: Pul-e Charkhi, 22—24 km ENE from Kabul city centre, 1780 m, 19 June, 1974 (No. 163); Prov. Herat: 1 ♀: Hari Rud river, about 8 km SW Herat, 950 m, 20 May, 1974 (No. 110).

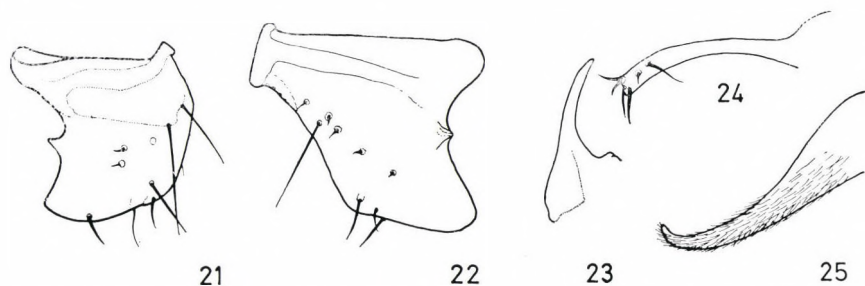
*L. (R.) kabuli* sp. n. resembles *L. (R.) modesta* DUDA, as it has four pairs of *sc*, angulated discal cell with vein-appendage, but its male genital structures are completely different, female seventh sternite rounded, not ending in a tip; the most easily recognizable characteristic is that the female subanal plate ends in a curved hook.

**Leptocera (Rachispoda) lutosa** (STENHAMMAR, 1854). — Prov. Kabul: 1 ♂: Bini Hesar lake, 5 km SE from Kabul city, 1780 m, 17 May, 1974 (No. 106); 3 ♂: Pul-e Charkhi, 22 km ENE from Kabul city centre, 1780 m, 2 June, 1974 (No. 144); Prov. Ghazni: 2 ♂: 2 km SE from Moqur, 1970 m, 3 June, 1974 (No. 146). A widespread species (Old World, North America). New to Afghanistan.

**Leptocera (Rachispoda) lutosoidea** (DUDA, 1938). — Prov. Herat: 3 ♂: Hari Rud river, about 8 km SW Herat, 950 m, 20 May, 1974. A little known species. It was known only from Europe and the Canary Islands. New to Afghanistan.

***Leptocera (Rachispoda) meges* sp. n.**

A dark brown species. Head less than 1.5 times higher than long, four pairs of *if*: first pair short and hairlike, second and third pairs cruciate or subcruciate. Eyes big, rounded, longest diameter 3.6 times longer than smallest genal width. Face only about 0.25 mm long, facial protuberance about 0.15 mm long and not very high, antennal foveae not deep. *Acmi* short, but two inner rows longer than outer rows (their distance 0.06—0.07 mm). No median *acmi*



Figs. 21—25. *Leptocera (Rachispoda) meges* sp. n., paratype male: 21 = anterior hypopygial process, outer side in lateral view, 22 = same in sublateral view, 23 = posterior hypopygial process, inner side in profile, 24 = pregonite, 25 = postgonite in profile

row. Scutellum with 3 pairs of marginal *sc*, basic pair short, other two pairs long and thick. Mid tibia with a very strong ventral preapical bristle (Fig. 8), also mid ventral metatarsal bristle strong (about 2/3 of tibial preapical bristle). Mid tibia with a strong posterior apical bristle reaching base of metatarsal bristle. Wing length: holotype ♂: 2.01 mm, paratypes: 1.98—2.22 mm, width: holotype ♂: 0.90 mm, paratypes: 0.85—1.10 mm. Wing with light brown veins,  $r_{4+5}$  moderately upcurving,  $c_x = 1.55 - 1.6$ ,  $t_a - t_p/t_p =$  about 3.0, discal cell angulate with short brown vein-appendage. Posterior hypopygial process of male (Fig. 23) incurving, pointed, almost perpendicular to axis of body, postgonite (Fig. 25) curved, covered with many fine hairs. Anterior hypopygial process wide with rather few bristles and with a mid anterior apex (Fig. 21, 22). Pregonite (Fig. 24) with some remarkable bristles on tip. Female seventh sternite rounded, subanal plate with four pairs of short yet strong, stiff bristles, supraanal plate with short hairs only.

Body-length: holotype ♂: 2.06 mm, paratypes: 1.90—2.88 mm.

Holotype male: Afghanistan, Prov. Kabul, Kabul, 1780 m, 30 April, 1974, leg. L. PAPP (No. 59). Paratypes: 6 ♂, 8 ♀: same data as for holotype; 5 ♂, 8 ♀: *ibid.*, 6 May (No. 80); Prov. Kabul: 2 ♂, 1 ♀: Bini Hesar lake, 5 km SE from Kabul city, 1780 m, 17 May, 1974 (No. 106); 1 ♀: *ibid.*, 1 June (No. 142).

*L. (R.) meges* sp. n. belongs to the *breviceps* species-group (3 *sc* pairs, angulated discal cell with vein-appendage, rounded female seventh sternite). Its nearest relative is *L. (R.) cryptochaeta* DUDA, but its facial protuberance



smaller, its ventral preapical bristle on mid tibia longer, mid ventral metatarsal bristle longer than in *cryptochaeta*, and it has only one (not two) strong posterior apical bristle on mid tibia. Its male genital structures are rather characteristic: mainly its finely hairy postgonite characterizing this new species.

***Leptocera (Rachispoda) micropyga* sp. n.**

Head only 1.4 times higher than long with big facial protuberance between antennae, face short, mouth edge protruding. Two pairs of strong anterior cruciate *if* and two pairs of posterior, short and hairlike *if*. Eyes big, longest diameter 4.0 times longer than smallest genal width. Arista moderately elongately pilose (0.025—0.028 mm). Sagittal line, *if* bands and orbits with grey pollen. Mesonotum greyish brown, vittate: two pairs of about 0.05 mm width, grey vittae in line of *dc* and along innermost and innermost ones, but one row of *acmi*. Thoracic bristles strong, first (inclinate) pair of *dc* not cruciate, no median *acmi* row, *acmi* uniformly short. Scutellum (Fig. 27) very long, mesonotum only 1.75 times longer than scutellum, basic pair of *sc* bristles short and thin, third pair placed on disc of scutellum. Legs greyish brown, but fore coxae, ventral side of first femora, knees and apices of tibiae ochreous yellow to yellowish brown. Preapical ventral bristle of mid tibia much thicker and four (!) times longer than ventromedial bristle on mid metatarsus. Mid tibia with a medium-sized ventral bristle at 3/5; anterodorsals: short and weak at 1/8, longer at 1/4, very long and thick at 3/8, short at 27/40, strong at 3/4; strong dorsal at 4/5; strong posterodorsals at 14/40 and at 3/4. Hind coxae with very fine hairs ventrally. Wing length of holotype ♂: 1.77 mm, width: 0.70 mm. Veins dark brown, cross-veins with wide, diffuse dark brown maculae, also along veins  $r_{2+3}$  and  $r_{4+5}$  a diffuse brown coloration.  $c_x = 1.25$ ,  $r_{4+5}$  only slightly upcurving,  $t_a - t_p/t_p = 2.1$ . Male genitalia small (Fig. 28), male fifth sternite with minute bristles on posterior edge medially, all genital structures small. Posterior hypopygial process short, triangular, postgonite slightly bent, bare with blunt apex.

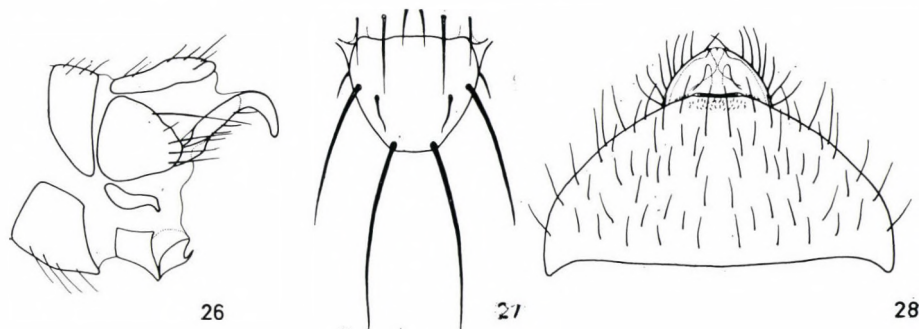
Body-length of holotype ♂: 1.75 mm.

Holotype male: Afghanistan, Prov. Nangarhar, Band-e Darunta, 590 m, 17 April, 1974, leg. L. PAPP (No. 37) (pinned).

*L. (R.) micropyga* sp. n. is an easily recognizable species. It has four pairs of *sc*, like *modesta* DUDA, but it has no other common characteristic with *modesta*. Its vittae on mesonotum, length and chaetotaxy of scutellum, and the very small genitalia separate this new species from all other Palearctic congeners. In all probability it is an Oriental species.

**Leptocera (Rachispoda) modesta** (DUDA, 1923). — Table I. It is known from Germany, Southern Europe, Carpathian Basin and Afghanistan (RICHARDS, 1962, HACKMAN, 1969). It is a very common mud-living species in Afghanistan.

**Leptocera (Rachispoda) subtinicipennis** (BRUNETTI, 1913). — Prov. Nangarhar: 1 ♂: Band-e Darunta, 590 m, 8 May, 1974 (No. 86). Known distribution: Canary Is., Cape Verde Is., North and East Africa, Nepal, Formosa, Assam, Micronesia. New to Afghanistan.



Figs. 26–28. 26 = *Leptocera (Rachispoda) kabuli* sp. n., abdominal end of paratype female; 27–28 = *L. (R.) micropyga* sp. n., holotype male: 27 = scutellum, 28 = fifth sternite and genitalia in ventral view

**Leptocera (Rachispoda) variicornis** (STROBL, 1900). — Prov. Kandahar: 1 ♂, 4 ♀: Arghandab river, 5 km from Kandahar, 100 m, 23 May, 1974 (No. 126); Prov. Ghazni: 8 ♂, 6 ♀: 2 km SE from Moqur, 1970 m, 3 June, 1974 (No. 146); Prov. Kabul: 1 ♀: Kabul, Aliabad, 1800 m, 3–4 April, 1974 (No. 8); 9 ♂, 6 ♀: ibid., 13 June (No. 149); 1 ♀: Pul-e Charkhi, 22–24 km ENE from Kabul city centre, 1780 m, 19 June, 1974 (No. 163). Known from the Palearctic and Ethiopian Regions. New to Afghanistan.

**Leptocera (Rachispoda) spp.:** leg. L. PAPP, 1974: 5 ♀ (No. 146); 8 ♀ (No. 126); 1 ♀ (No. 144); 5 ♀ (No. 37) (HNHM); N Afghanistan, Prov. Herat, Bala Murghab, 470 m, coll. O. JAKÉŠ, 1964, sp. pr. *tuberosa* det. HACKMAN: 1 ♂: 1. 6.–10. 6. (23); 1 ♀: 16. 6. (28); 1 ♀: 20. 6.–24. 6. (30).

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## DIE VITREA-ARTEN DER ÄGÄISCHEN INSELN (GASTROPODA: ZONITIDAE)

Von

L. PINTÉR

(Eingegangen am 30. April 1977)

The author gives a summary of the nine known *Vitrea*-species (Gastropoda: Zonitidae) from the Aegean Islands (Greece) describing three new ones.

Unter den ägäischen Inseln verstehe ich die ganze Inselwelt zwischen Griechenland und der Türkei mit Ausnahme von Kreta und den umliegenden kleinen Inseln. Auf diesem ausgedehnten Gebiet wurde bisher, abgesehen von ganz wenigen Inseln, nicht viel gesammelt. Besonders die kleineren Arten, z. B. die Vitreini, wurden sehr oft übersehen. Wenn jetzt eine Zusammenfassung aller bisherigen *Vitrea*-Funde im genannten Areal gegeben wird, wird auch auf die Tatsache hingewiesen, daß die ägäischen Inseln, im Hinblick auf die Vitreini, so gut wie unbekannt sind. Die hier aufgezählten Angaben, die das zur Zeit erreichbare Gesamtmaterial öffentlicher und privater Sammlungen darstellen, entstammen insgesamt zwölf Inseln: Andros, Astakida, Chios, Ikaria, Karpathos, Nisiros, Rhodos, Simi, Sirina, Syra, Thira, Tinos. Von den repräsentierten neun Arten sind sieben endemisch auf den betreffenden Inseln, davon drei neu für die Wissenschaft.

Dank schulde ich den Herren DR. R. KILIAS (Berlin), Dr. H. PIEPER (Kiel) und Dr. A. ZILCH (Frankfurt am Main) für die Überlassung des Materials sowie Herrn Gy. SIPOS (Budapest) für die Anfertigung der Zeichnungen.

Für die Sammlungen habe ich folgende Abkürzungen verwendet: I. Z. PAN: Instytut Zoologiczny, Polska Akademia Nauk, Warszawa; NMW: Naturhistorisches Museum, Wien; P: Privatsammlung von L. PINTÉR, Budapest; SMF: Senckenberg-Museum, Frankfurt am Main; TMB: Természettudományi Múzeum Állattára, Budapest; ZMB: Zoologisches Museum, Berlin.

Bevor die Vitreini aufgezählt werden, ist es in diesem Zusammenhang unvermeidlich, zur außerordentlich wichtigen und lange erwarteten Arbeit von PAGET (1976), mit Bezug auf die *Vitrea*-Arten, einige kritische Bemerkungen zu geben.

1. Zur Variabilität und Synonymie von *Vitrea contracta* (WEST.) siehe meine früheren Ausführungen (PINTÉR, 1969: 322–323; 1972: 272–276). Die *zakynthia*-Form halte ich für eine infrasubspezifische Kategorie.



2. *Vitrea botterii* (L. PFEIFFER), bei deren Beurteilung sich die meisten älteren Forscher geirrt haben, ist eine selbständige, gute Art und hat zu *V. contracta* keine näheren Beziehungen.

3. Auf dem Festland südlich des Taurus-Gebirges kommt *V. contracta* vor. »*Vitrea carmeliensis*« ist keine *Vitrea* (PINTÉR, 1972: 279—280; FORCART, 1973: 7).

#### *Vitrea contortula* (KRYNICKI, 1837)

*Helix contortula* KRYNICKI, 1837. Bull. Soc. Nat. Moscou, **10**: 51.

*Vitrea contortula* (KRYNICKI, 1837): PINTÉR, 1972: 221—222.

Zu den Angaben von RIEDEL (1970: 26) und PINTÉR (1972: 222) kommt ein bisher isoliertes Vorkommen hinzu: die Insel Karpathos. Erstnachweis für Griechenland. Es handelt sich hier um die f. *angystropha* (O. BOETTGER).

**M a t e r i a l:** Insel Karpathos, Umgebung von Mertonas, 16. III. 1973, leg. H. PIEPER, 1 Expl. (P). — Insel Karpathos, 1,5 km NO von Volada, 19. VIII. 1976, leg. L. PINTÉR, 6 Expl. (P).

#### *Vitrea pieperiana* PINTÉR, 1977

*Vitrea pieperiana* PINTÉR 1977. Acta Zool. Hung., **23**: 184—186.

Während eines kurzen Aufenthaltes auf der Insel Karpathos konnte diese vor kurzem beschriebene Art am Locus typicus nur in zwei Jungstücken wiedergefunden werden.

**M a t e r i a l:** Insel Karpathos, 1,5 km NO von Volada, 30. III. 1970, leg. H. PIEPER, 1 Expl. (TMB). — Dasselbst, 19. VIII. 1976, leg. L. PINTÉR, 2 Expl. (P).

#### *Vitrea klemmi* PINTÉR, 1972

*Vitrea klemmi klemmi* PINTÉR 1972. Ann. Zool., Warszawa, **29**: 252—255.

Seit der Beschreibung dieser Art ist keine neue Angabe bekannt geworden. Wegen der schlechten Verkehrsverbindungen zwischen den griechischen Inseln konnte ich die Insel Ikaria 1976 nicht besuchen.

**M a t e r i a l:** »Nikaria bei Petropolis«, leg. OERTZEN, 22 Expl. (SMF 170949a, SMF 170949b, ZMB 42549).

Bemerkung: Die als Unterart beschriebene *Vitrea klemmi ephesina* PINTÉR, 1972 ist aller Wahrscheinlichkeit nach eine eigene Art. Das in PINTÉR (1972: 255) erwähnte unbestimmbare Stück von der Insel Andros, Berg Kovari (SMF 170945), ist zerfallen und nicht zu identifizieren. Das ist das bisher bekannte einzige *Vitrea*-Vorkommen auf Andros.

#### *Vitrea pageti* sp. n.

**D i a g n o s e:** Eine Art der Gattung *Vitrea* FITZINGER 1833 mit an *V. diaphana* (STUDER) erinnernder Oberseite und trichterförmigem Nabel.

**B e s c h r e i b u n g:** Gehäuse relativ groß, Gewinde wenig erhoben, Umgänge 5 1/4, langsam und regelmäßig zunehmend, der letzte etwa 2mal so breit wie der vorletzte. Oben und unten nicht abgeflacht, seitlich halbrund. Naht seicht, aber deutlich. Umgänge mäßig gewölbt, relativ hoch. Nabel innen eng, regelmäßig trichterförmig, langsam breiter werdend, alle Umgänge zeigend. Die Innenwände der Umgänge stark gewölbt. Mündung schief eiförmig,

stark ausgeschnitten, oben nautilusförmig vorgezogen. Außenrand etwas dachartig abgeschrägt, Basalrand gleichmäßig gebogen, Spindelteil kurz, senkrecht. Schale gelblichweiß, im frischen Zustand glasartig, glänzend, durchscheinend, bei stärkerer Vergrößerung gekörnelt und verschwommen spiralig skulpturiert (Abb. 1—3).

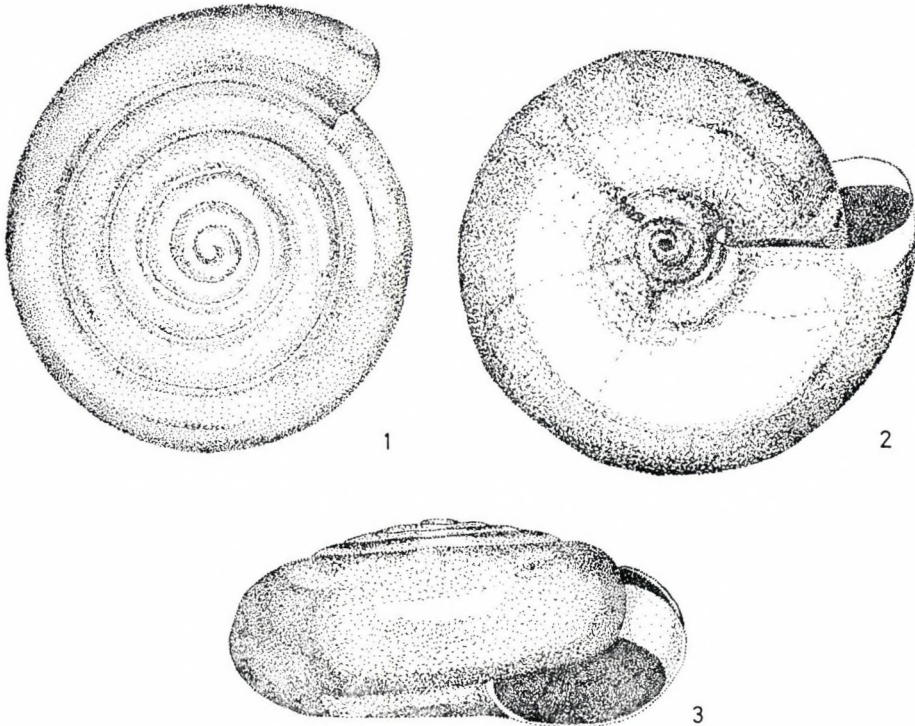


Abb. 1—3. *Vitrea pageti* sp. n. Holotypus

Maße des Holotypus: 1,9 : 4,0 mm.

**L o c u s t y p i c u s :** Griechenland, Insel Rhodos, im Tal der Schmetterlinge (Petaloudes) unweit des Dorfes Kato Kalamon, im Felsenmulm. Gesammelt am 18. VIII. 1976 von L. PINTÉR. Bisher einziger Fundort.

**M a t e r i a l :** Holotypus in der Molluskensammlung des Ungarischen Naturwissenschaftlichen Museums, Budapest (TMB), 23 Paratypen in den Sammlungen NMW, P, TMB.

**Namengebung:** Ich widme diese neue Art Herrn DR. OLIVER E. PAGET (Wien), dem vorzüglichen Kenner der Molluskenfauna der Insel Rhodos.

**B e z i e h u n g e n :** *V. ephesina* PINTÉR ist etwas kleiner, mehr gedrückt, seitlich weniger gerundet, Mündung enger. *V. klemmi* PINTÉR ist kleiner, bei gleicher Schalenbreite ist der Nabel enger, der letzte Umgang etwas schmaler. *V. demiobasensis* PINTÉR ist kleiner, mit breiterem letztem Umgang, Nabel bei gleicher Schalengröße breiter.



***Vitrea sossellai* sp. n.**

**Diagnose:** Eine Art der Gattung *Vitrea* FITZ. mit von oben asymmetrisch zusammengedrücktem letztem Umgang und trichterförmigem Nabel.

**Beschreibung:** Gehäuse mittelgroß, Gewinde mäßig erhoben, mit etwa 5 regelmäßig anwachsenden Umgängen. Der letzte annähernd 1,5mal breiter als der vorletzte. Von oben mehr, von unten weniger zusammengedrückt, im oberen Drittel am breitesten, seitlich asymmetrisch gerundet. Umgänge oben wenig gewölbt, Naht seicht, aber deutlich. Mündung schief, stark ausgeschnitten, relativ eng halbmondförmig, oben nautilusförmig vorgezogen, Mundsaum geschwungen. Außenrand an der Insertion kurz horizontal, dann im ersten Drittel stark gerundet und flachbogig in den Spindelteil übergehend. Spindelteil kurz, fast senkrecht, bei Jungstücken kurz nach links gebogen. Nabel innen trichterförmig, beim letzten Umgang etwas erweitert. Die Innenseite der Umgänge verhältnismäßig stark gewölbt. Schale im frischen Zustand gelblichweiß, glasartig glänzend, durchscheinend, glatt. Oberfläche bei stärkerer Vergrößerung etwas gekörnelt, mit feinen, undeutlichen Spirallinien (Abb. 4—6).

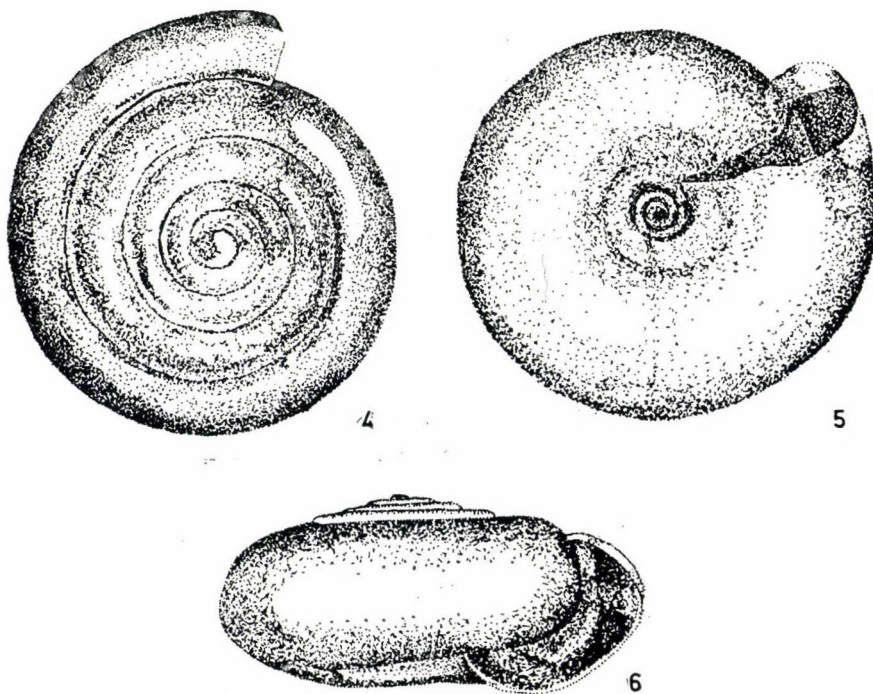


Abb. 4—6. *Vitrea sossellai* sp. n. Holotypus

Maße des Holotypus: 1,7 : 3,6 mm.

**Locus typicus:** Griechenland, Insel Simi (= Syme), südliche Felsengruppe, direkt oberhalb des gleichnamigen Ortes, dicht hinter den letzten Häusern. Gesammelt am 17. VIII. 1976 von L. PINTÉR. Bisher einziger Fundort.

**Material:** Holotypus in der Molluskensammlung des Ungarischen Naturwissenschaftlichen Museums zu Budapest (TMB), 29 Paratypen in den Sammlungen P und TMB.

**Namengebung:** Diese neue Art benenne ich zu Ehren des Franziskanerpaters MASSIMO SOSSELLA (Rhodos), der mich während meiner Rhodos-Reise im Pfarrhaus freundlich aufgenommen und dadurch meine Forschungen auf Rhodos, Karpathos und Simi ermöglicht hat.

**Beziehungen:** *V. klemmi* PINTÉR ist kleiner, bei gleicher Größe besitzt sie mehr Umgänge, der letzte Umgang weniger breit, Nabel beim letzten Umgang mehr erweitert, trichterförmig, alle Umgänge zeigend, Schale seitlich regelmäßig gerundet. *V. ephesina* PINTÉR ist größer, oben gleichmäßiger abgeflacht, der letzte Umgang breiter, seitlich gerundet, Umgänge oben weniger gewölbt, Naht seichter. *V. pageti* sp. n. ist größer, Oberseite regelmäßiger gebaut, der letzte Umgang etwas mehr erweitert, seitlich gut gerundet, Nabel trichterförmig, gleichmäßiger breiter werdend.

***Vitrea storchi* sp. n.**

**Diagnose:** Eine Art der Gattung *Vitrea* FITZ. mit stark abgeflachter Oberseite, sehr breitem letztem Umgang und mit einem allmählich breiter werdenden Nabeltrichter.

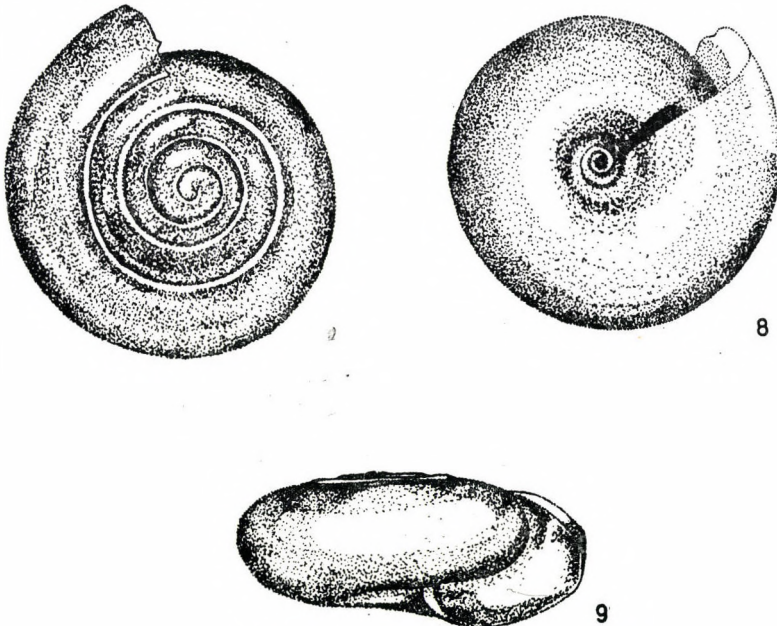


Abb. 7–9. *Vitrea storchi* sp. n. Holotypus



**B e s c h r e i b u n g :** Gehäuse klein, sehr niedrig, Gewinde kaum erhoben, fast eingeebnet, Umgänge 4 1/2, sehr wenig gewölbt, regelmäßig anwachsend, einander stark umgreifend, der letzte etwa 2,5mal breiter als der vorletzte. Oben deutlich, unten leicht abgeflacht, seitlich etwas unregelmäßig gerundet. Naht seicht, breit fadenförmig. Mündung schief eiförmig, gut ausgeschnitten. Oben leicht nautilusförmig vorgezogen. Außenrand kurz nach oben gerichtet, dann fast halbkreisförmig abfallend, Basalrand flachbogig, Spindelteil kurz, annähernd senkrecht. Nabel trichterförmig, relativ breit, von der Spitze an langsam, regelmäßig breiter werdend. Schale durchscheinend, gelblichgrau, glänzend, stellenweise gestreift und äußerst fein und verschwommen spiralig skulptiert (Abb. 7—9).

**Maße des Holotypus:** 1,3 : 3,0 mm (vermutlich noch unausgewachsen).

**L o c u s t y p i c u s :** Griechenland, Insel Chios, in einem antiken Steinbruch, wenige Kilometer nördlich der Stadt Chios, auf dem Hügel Latomi. Gesammelt im Mai 1972 von DR. GERHARD STORCH. Einziger Fundort.

**M a t e r i a l :** Holotypus und 1 Paratypus (SMF 225804).

**N a m e n g e b u n g :** Die neue Art wird ihrem Entdecker, Herrn DR. GERHARD STORCH (Frankfurt am Main) gewidmet.

**B e z i e h u n g e n :** *Vitrea brandti* PINTÉR aus Libyen ist von oben ähnlich, sie ist aber noch mehr abgeflacht und besitzt engere Umgänge. Auch der Nabel ist bei *V. brandti* viel breiter. *V. demiobasensis* PINTÉR ist höher gewunden, seitlich mehr gerundet, mit engerem letztem Umgang und breiterem Nabel.

**B e m e r k u n g :** Obwohl *V. storchi* sp. n. aus einer Spaltenfüllung mit mittelpleistozänen Tierresten stammt, scheint sie, nach den Schalenmerkmalen zu urteilen, zur rezenten Fauna zu gehören.

#### *Vitrea riedeliana* PAGET, 1976

*Vitrea riedeliana* PAGET, 1976. Ann. Naturhist. Mus. Wien, **80**: 726—729.

PAGET entdeckte diese sehr charakteristische Art bereits im Jahre 1959. Auch während seiner späteren Sammelreisen (1963, 1969, 1971) wurde sie in verhältnismäßig großer Zahl gesammelt. Im Sommer 1976 fand ich die Art an dem Locus typicus.

**M a t e r i a l :** Insel Rhodos, Unterbauten der Burg von Lindos, 16. VIII. 1976, leg. L. PINTÉR, 9 Expl. (P, TMB). Die übrigen Fundorte siehe in PAGET (1976: 728—729). Bisher nur von der Ostseite der Insel Rhodos nachgewiesen, von Rhodini bis Cap Mirtias, südlich von Lindos.

#### *Vitrea clessini* (HESSE, 1882)

*Hyalinia Clessini* HESSE, 1882. Jb. dtsch. malak. Ges., **9**: 318—319.

*Vitrea clessini* (HESSE, 1882): PINTÉR 1972: 276—277.

Die Beurteilung dieser Art ist seit meiner Balkanarbeit (PINTÉR, 1972) nicht eindeutiger geworden. Die Art wurde auf zwei Exemplare gegründet, von denen das eine *V. contracta* (WEST.) ist. Seitdem gibt es keine weiteren Funde.

**Material:** Insel Tinos, leg. HESSE, 1 Expl. (Acad. Nat. Sci. Philadelphia, USA, 248103a).

### *Vitrea contracta* (WESTERLUND, 1871)

*Zonites crystallina* var. *contracta* WESTERLUND 1871. Fauna Moll. terr. fluv. Sveciae, Norvegiae et Daniae: 56.

*Hyalinia Zakyntia* HESSE, 1882. Jb. dtsch. malak. Ges., **9**: 319.

*Hyalinia Blanci* HESSE, 1882. Jb. dtsch. malak. Ges., **9**: 319—320.

*Vitrea contracta* (WESTERLUND, 1871); PINTÉR 1972: 272—276.

Eine fast über ganz Europa verbreitete Art, die vermutlich auch im ägäischen Raum überall vorkommt.

**Material:** Insel Tinos, leg. HESSE, 1 Expl. (Acad. Nat. Sci. Philadelphia, USA, 248103 — als *Hyalinia Clessini* HESSE beschrieben). — Insel Chios, am Berg Elias, leg. OERTZEN, 1 Expl. (ZMB). — Insel Rhodos, Lindos, Anhöhe Straße, leg. PAGET, 5 Expl. (NMW — siehe PAGET, 1976: 725—726). — Insel Ikaria, bei Petropolis, leg. OERTZEN, 1 Expl. (ZMB). — Insel Karpathos, 1,5 km NO von Volada, 30. III. 1970, leg. H. PIEPER, 1 Expl. (P); 19. VIII. 1976, leg. L. PINTÉR, 30 Expl. (P). — Insel Karpathos, Mertonas, 16. III. 1973, leg. H. PIEPER, 4 Expl. (P); 7. V. 1975, leg. H. PIEPER, 1 Expl. (P). — Insel Syra, Hermoupolis, 4. III. 1971, leg. H. PIEPER, 1 Expl. (P). — Insel Thira, Profitis Ilias, 8. III. 1971, leg. H. PIEPER, 1 Expl. (I. Z. PAN). — Insel Thira, Monolithos, 11. III. 1971, leg. H. PIEPER, 8 Expl. (P). — Insel Nisiros, Mandraki, 17. III. 1970, leg. H. PIEPER, 2 Expl. (P). — Insel Sirina, Südostteil, 12. IX. 1971, leg. H. PIEPER, 1 Expl. (P). — Insel Astakida, 13. IX. 1971, leg. H. PIEPER, 2 Expl. (P). — Insel Simi, südlich von der gleichnamigen Ortschaft, 17. VIII. 1976, leg. L. PINTÉR, 2 Expl. (P).

**Bemerkung:** Die auf den ägäischen Inseln gefundene *V. contracta* entspricht in ihrer Form der f. *zakyntia* (HESSE).

### Geographische Verbreitung der behandelten Arten

Andros: <i>Vitrea</i> sp.	Rhodos: <i>contracta</i> , <i>pageti</i> , <i>riedeliana</i>
Astakida: <i>contracta</i>	Simi: <i>contracta</i> , <i>sossellai</i>
Chios: <i>contracta</i> , <i>storchii</i>	Sirina: <i>contracta</i>
Ikaria: <i>contracta</i> , <i>klemmi</i>	Syra: <i>contracta</i>
Karpathos: <i>contortula</i> , <i>contracta</i> , <i>pieperiana</i>	Thira: <i>contracta</i>
Nisiros: <i>contracta</i>	Tinos: <i>clessini</i> , <i>contracta</i>

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## GNORIMOSCHEMINI AUS DER MONGOLEI (LEPIDOPTERA: GELECHIIDAE)\*

Von

D. POVOLNÝ

(Eingegangen am 23. April 1977)

Description of 3 new species (*Scrobipalpa arborealis* sp. n., *S. felixi* sp. n., *Lutialbria kaszabi* sp. n.) and faunistical data of 4 known Gnorimoschemini from Mongolia, collected mostly by DR. Z. KASZAB, partly by DR. V. FELIX.

Der vorliegende Beitrag stellt einen Nachtrag zu meiner Bearbeitung der mongolischen Gnorimoschemini (POVOLNÝ, 1969, 1973) dar. Er stützt sich auf das restliche Material von nur 24 Faltern, die sämtlich aus der Nord- bis Nordwest-Mongolei stammen, wo allerdings recht wenig gesammelt wurde. Von diesen wurden 22 noch unter den bisher unbestimmten Gelechiiden-Serien der früheren Ausbeuten von DR. Z. KASZAB, Budapest, entdeckt. Die restlichen zwei Falter wurden von Doz. DR. V. FELIX, Prag, zusammen mit einer kleineren Ausbeute von Faltern in der Nord-Mongolei gesammelt. Die größere Menge dieses Materials gehört zu den bereits bekannten Arten, trotzdem konnten noch drei bisher unbekannte Arten entdeckt werden, die höchstwahrscheinlich zu der Arborealfauna des Landes gehören. Diese Arten weisen auch verwandtschaftliche Beziehungen zu den Taxonen auf, die bisher aus dem palaearktischen Arboreal bekannt sind.

Ich fühle mich den Kollegen DR. Z. KASZAB, Budapest, DR. V. FELIX, Prag, und DR. H. STEUER, Bad Blankenburg (DDR), für ihre Mitwirkung während der Vorbereitung dieses Beitrages zutiefst verbunden.

### *Scrobipalpa arborealis* sp. n.

Nach einem geflogenen Männchen beschrieben.

Habitus. — Eine mittelgroße, fast eintönig aschgrau verfärbte Art.

Kopf mit Labialpalpus. Thorax und Tegula, Stirn und Innenseite des Labialpalpus leicht aufgehellt. Außenseite des Labialpalpus von leicht abstehenden hellen Schuppen mit schwärzlichen Spitzen bedeckt. Drittes Palpusglied ebenfalls eher gefleckt, doch mit Andeutung von zwei dunklen Ringen. Vorderflügel auf den ersten Blick fast eintönig hell graphitgrau mit etwas

\* Ergebnisse der zoologischen Forschungen von DR. Z. KASZAB in der Mongolei (Nr. 419).



dunklerer Spitze. Doch sieht man auf beiden Flügeln hinter dessen erstem Drittel näher dem Hinterrand die Andeutung von einem länglichen schwärzlichen Stigma von einigen bräunlichen Schuppen umgeben. Hinterflügel deutlich aufgehellt. Fransen hellgrau. Außenseite der Beine von hellen Schuppen mit dunkelgrauen Spitzen bedeckt. Vorderflügelänge 6,3 mm (Abb. 1).

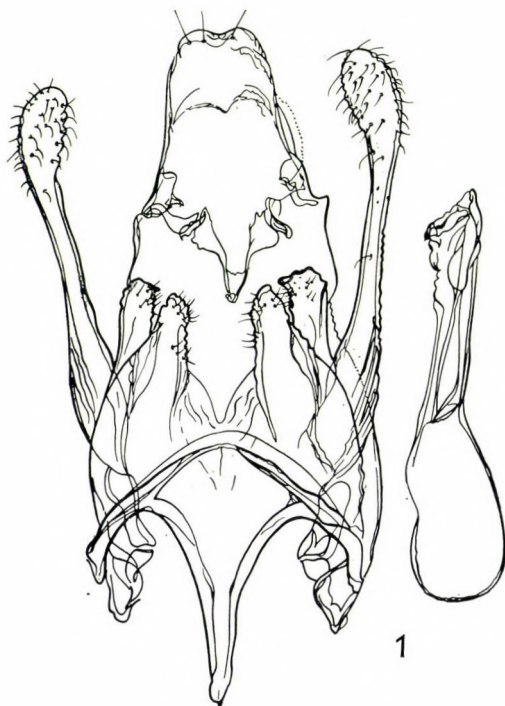


Abb. 1. *Scrobipalpa arborealis* sp. n. Genitalien des Holotypus

**Genitalien.** — ♂. Uncus zur Spitze leicht verschmälert, mäßig gewölbt, doch in der Mitte etwas ausgebuchtet. Die keulenartig verdickten Valven kürzer als obere Uncuskante. Paarige Sacculusfortsätze beiderseits des untiefen Sacculusausschnittes gut entwickelt mit breiter stumpfer Spitze. Paarige Parabasalfortsätze breit, nur mäßig höher als Sacculusfortsatz. Saccus nur mäßig vorgezogen. Aedeagus mittelgroß, nicht zu plump, nur der relativ lange Caecum aedeagi-Abschnitt dicker.

**Material:** Holotypus ♂, Mongolia, Bulgan aimak: Namnan ul Gebirge, 23 km NW von Somon Chutag, 1150 m, 17. VI. 1968 (Nr. 977), leg. Z. KASZAB.

**Verwandtschaft und Differentialdiagnose.** — Von den aus der Mongolei bekannte Arten scheint die neue Art der *Scrobipalpa marmorella* Pov. am nächsten zu stehen (vergl. Abb. 1, 2), doch bestehen sowohl habituell als auch genitalienmäßig beträchtliche Unterschiede zwischen

den beiden Arten. Im Rahmen der Gattung dürfte *S. arborealis* sp. n. der Art *S. japonica* Pov. aus dem japanischen Arboreal nahe stehen (POVOLNÝ 1977, Abb. 6, 16). Doch sind, abgesehen von habituellen Unterschieden, auch deutliche Genitalienunterschiede nicht zu übersehen. Vor allem ist der Aedeagus beider Arten unterschiedlich (kürzer und plumper bei *S. japonica*). Propor-

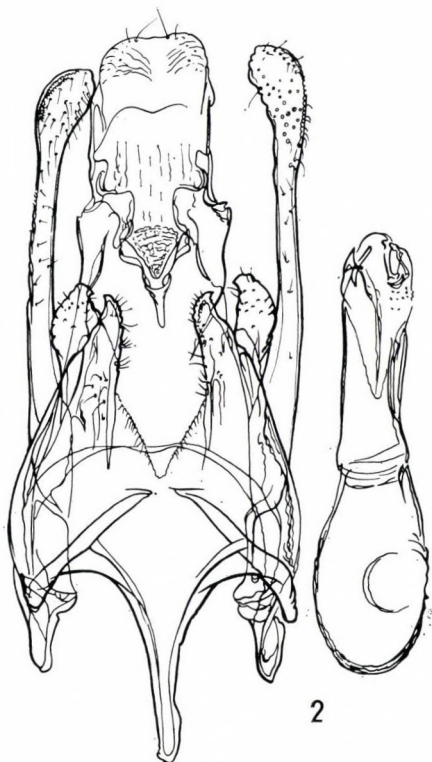


Abb. 2. *Scrobipalpa marmorella* Pov. Genetalien Männchens

tionell sind bei *S. arborealis* sp. n. die Unterschiede zwischen der Länge der Valva und des Sacculus größer als bei *S. japonica*. Auch die beiden paarigen Fortsätze (des Sacculus und der Valva) sind in Einzelheiten unterschiedlich. Trotzdem besteht eine beträchtliche allgemeine Ähnlichkeit zwischen den männlichen Genitalien beider Arten. Auch chorologisch wäre diese Beziehung begründet, da beide Arten offenbar arboreal sind.

♀ — unbekannt.

#### ***Scrobipalpa felixi* sp. n.**

Nach einem sehr gut erhaltenen, leicht geflogenen Männchen beschrieben.

Habitus. — Eine mittelgroße, einfarbig graue Art.

Kopf mit Thorax und Tegula von aschgrauen Schuppen mit helleren



Spitzen bedeckt, Stirn wahrscheinlich kaum aufgeheilt. Der schlank vorgezogene Labialpalpus ist heller als die übrige Färbung des Kopfes. Zweites Palpenglied von deutlich abstehenden Schuppen bedeckt, die auf der Außenseite des Gliedes dunkel, auf der Innenseite schmutzig weißlich aufgeheilt sind. Drittes Palpenglied fast eintönig grau, ohne Ringe. Die Vorderflügelfläche wird von einer eintönigen Mischung grauer Schuppen mit dunkleren

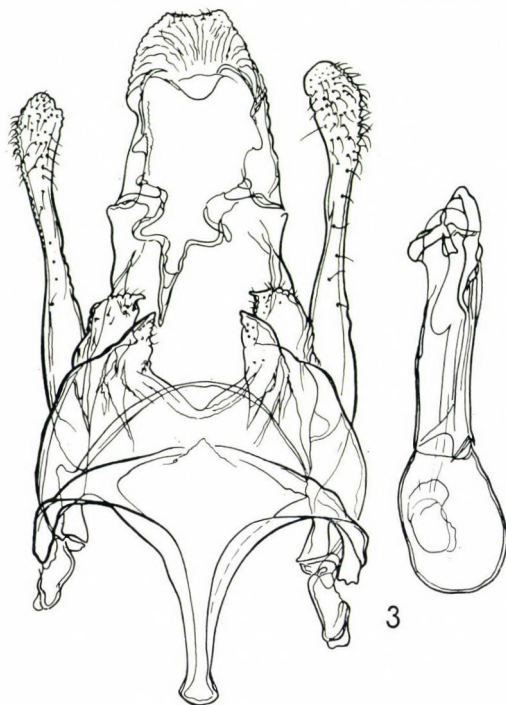


Abb. 3. *Scrobipalpa felixi* sp. n. Genitalien des Holotypus

Spitzen bedeckt, die in Richtung zum Flügelapex dichter erscheinen. Die Grundfärbung ist deswegen beinahe eintönig grau, und sie entbehrt jeder Zeichnung. Hinterflügel schmutzig grauweißlich mit dunkleren Rändern, leicht glänzend mit hellgrauen Fransen. Außenseite der Beine dunkel-, Innenseite hellgrau, aber kaum geringelt. Vorderflügelänge 6 mm.

**Genitalien.** — ♂. Uncus relativ breit, oben mäßig konkav, fein behaart und fein gerunzelt, deutlich höher als die keulenförmig verdickte, mit Ausnahme der Basis bewimperte Valva. Die paarigen Fortsätze der Sacculusfalte beiderseits des breiten seichten Sacculusausschnittes mäßig nach innen gebogen mit stumpfer Spitze und relativ kurz. Auf diese Weise steht er im Kontrast zu dem beträchtlich größeren, höheren und vor allem breiteren parabasalen Valvenfortsatz. Saccus kurz vorgezogen und schlank, Spitze leicht

erweitert. Aedeagus relativ groß und plump mit deutlicher subterminaler Kralle (Abb. 3).

♀ — unbekannt.

Material: Holotypus ♂, Mongolia sept., Mörön, Tunnel 2000 m, 10. VI. 1975, leg. V. FELIX.

#### Verwandschaft und Differentialdiagnose. —

Diese Art ist aufgrund der einmaligen Form und Verhältnisse zwischen den paarigen Sacculus- und Parabasalfortsätzen der Valva einwandfrei in der Gattung *Scrobipalpa* JAN. charakteristisch. Etwas ähnliche Verhältnisse liegen zwar auch bei *S. frugifera* POV. (POVOLNÝ 1969, Abb. 30) vor, doch dort ist der ganze unculoteguminale Komplex ganz anders gebaut. Ähnliche Verhältnisse zwischen Größe und Form dieser beiden paarigen Fortsätze gibt es allerdings auch bei anderen Arten der Gattung [so z. B. bei der *S. nitentella* (FUCHS)-Gruppe, bei *S. gozmanyi* POV., *S. nigrosparsa* POV. usw.]. Ob anhand dieser Ähnlichkeit auch echte Verwandtschaft vorliegt, bleibt abzuwarten.

#### *Lutilabria kaszabi* sp. n.

Nach einem beschädigten kopflosen Männchen beschrieben.

Habitus. — Eine offenbar einfarbig gräuliche, mittelgroße Art.

Thorax und Tegula von dichten aschgrauen Schuppen bedeckt. Auch Vorderflügel von dichten aschgrauen bis schmutzig weißlichen Schuppen mit dunkelgrauen Spitzen bedeckt und offenbar ohne jede Zeichnung, Fransen abgerieben. Hinterflügel ebenfalls grau, doch etwas aufgehellt. Fransen fein, lang, in der Basisnähe haarig, hell aschgrau, Vorder- und Mittelbeine dunkel, Tarsen schmutzig weißlich geringelt. Hinterbeine schmutzig aschgrau mit verdunkelten Tarsen. Vorderflügelänge etwa 7,8–8 mm.

Genitalien. — ♂. Uncus kurz und oben stumpf abgestutzt, Gnathos krallenlos, doch mit deutlichem paarigem Lateralarm. Die leicht gebogene Valva ist oben mäßig verdickt und deutlich behaart. Der lange mächtige Saccus läuft in eine schmalere Spitze aus. Der lange zugespitzte Aedeagus hat eine kurzes kugelartiges Caecum und ist deutlich gebogen (Abb. 4).

Material: Holotypus ♂, Mongolia, Bulgan aimak: zwischen Somon Chischig-Öndör und Somon Orchon, 23 km NNO von Chischig-Öndör, 1390 m, 15. VI. 1968 (Nr. 964), leg. Z. KASZAB.

#### Verwandschaft und Differentialdiagnose. —

Die Art ist in allen Merkmalen streng kongenerisch mit dem einzigen bisher bekannten Vertreter der Gattung *Lutilabria* POV. — *L. lutilabrella* (MANN, 1857) (siehe POVOLNÝ, 1965). Die Existenz von *L. kaszabi* POV. bestätigt deswegen endgültig die taxonomische Valenz dieser Gattung. Das auffallendste spezifische Merkmal von *Lutilabria kaszabi* sp. n. ist die Form der Sacculusfalte,



besonders deren auffallender zapfenförmiger paariger Fortsatz. In Einzelheiten unterscheiden sich jedoch die beiden Arten fast in allen Genitalmerkmalen (Abb. 4, 5). Zu den habituellen Unterschieden ist wenig zu bemerken, da der Holotypus von *L. kaszabi* beschädigt ist. Es steht aber fest, daß auch diese Art, ebenso wie *L. lutilabrella*, zeichnungslos ist. Die Entdeckung

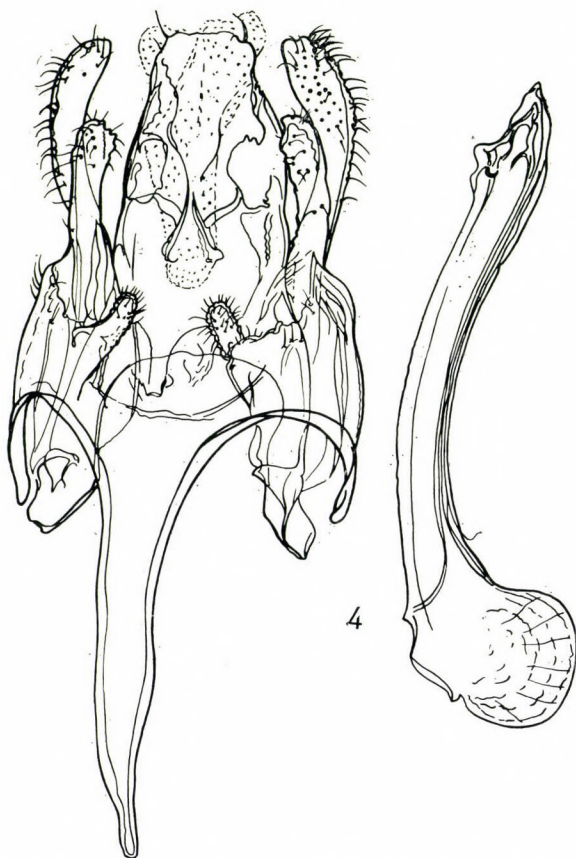


Abb. 4. *Lutilabria kaszabi* sp. n. Genitalien des Holotypus

dieser Art gehört zu den bedeutsamsten taxonomisch-phylogenetischen Resultaten der Erforschung mongolischer Gnorimoschemini, weil sie zur Bereicherung der bestehenden Kenntnis dieser ganzen Gruppe wesentlich beiträgt.

*Scrobipalpa artemisiella mongolensis* POVOLNÝ, 1969

POVOLNÝ, 1969, Acta sc. nat. Brno, **3** (12): 1–28.

Alle Falter dieser kleinen Serie entsprechen dieser schwärzlichen Unterart und ihrem bekannten Verbreitungsbild. Nur das eine Männchen (Somon Chan-

žargalant) stammt aus einem neuen Fundort, allerdings ebenfalls im Arboreal der nördlichen Mongolei.

Material: Chövsgöl aimak: 4 km NW von der Stadt Mörön, 1500 m, 19. VII. 1968 (Nr. 1128), 1 ♂, 1 ♀. — Bulgan aimak: 7 km NW von Somon Chanžargalant, 1350 m, 16. VI. 1968 (Nr. 969), 1 ♂, leg. Z. KASZAB.



Abb. 5. *Lutilabria lutilabrella* (MANN). Genitalien des Männchens

*Scrobipalpa grisea* POVOLNÝ, 1969

POVOLNÝ, 1969, Acta sc. nat. Brno, 3 (12): 1—28.

Das Material entspricht dem bekannten Verbreitungsbild dieser Art in der Mongolei, und das eine Weibchen (Umg. von Ulaangom) bestätigt das Vorkommen dieser mongolereimischen bis südsibirischen Steppenart in der Senke der großen Seen im Nordosten des Landes.



Material: Bajan-Ölgij aimak: rechtes Ufer des Flusses Chovd gol bei der Stadt Ölgij, 1750 m, 30. VI. 1968 (Nr. 1047), 2 ♂♂, 1 ♀; NO-Ecke des Sees Tolbo nuur, 2100 m, 1. VII. 1968 (Nr. 1051), 2 ♂♂, 1 ♀. — Bulgan aimak: 11 km W von Somon Bajan nuur, am Südrand des Sees Bajan nuur, 1000 m, 14. VI. — 24. VII. 1968 (Nr. 958), 1 ♂; ibid., 24. VII. 1968 (Nr. 1144), 1 ♂. — Uvs aimak: am Fluß Chöndlön gol, 32 km NW von der Stadt Ulaangom, 1200 m, 7. VII. 1968 (Nr. 1078), 1 ♀. — Central aimak: 25 km O von Somon Lun, 1200 m, 25. VII. 1968 (Nr. 1148), 1 ♂, alle von Z. KASZAB gesammelt.

*Scrobipalpa nitentella* (FUCHS, 1902)

FUCHS, 1902 Ent. Ztg. Stett., **63**: 324 (*Lita*).

Das einwadfreie Weibchen (Abb. 6) bestätigt das Vorkommen dieser nur aus der westlichen Paläarktis bekannten halophilen Art (Salinen Europas, Inneranatoliens) in der Mongolei. Der Fund ist zoogeographisch sehr wichtig, weil er die sonst mangelhaft bekannten gemeinsamen Beziehungen zwischen der Tierwelt der innerasiatischen Salinen mit den westpalaearktischen Salinen nachweist (POVOLNÝ, 1973). Das stark beschädigte Weibchen dürfte sich wohl aus den Salinen in der Umgebung des Sees Ačit nuur in den äußersten Nordosten des Landes verflogen haben.

Material: 1 ♀, Bajan-Ölgij aimak, im Tal des Flusses Chavcalyn gol, 24 km O von Somon Cagannuur, 1890 m, Nr. 1042, 29. VI. 1968, leg. Z. KASZAB.

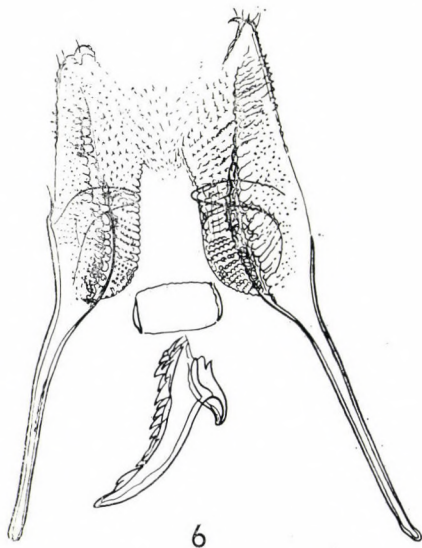


Abb. 6. *Scrobipalpa nitentella* FUCHS. Genitalien des Weibchens, Cagannuur

*Gnorimoschema mongolorum* POVOLNÝ, 1969

POVOLNÝ, 1969, Acta sc. nat. Brno, **3** (12): 1–28.

Die Angaben des vorhandenen Materials über die Verbreitung stimmen vollkommen mit denen über die Verbreitung dieser Art im nordmongolischen Arboreal überein. Habituell ähnelt das eine Männchen aus der Umgebung von Ulaan-Bator auffallend der europäischen Art *G. streliciellum* (H.-SCH.), die übrigen sind wesentlich größer, eintönig dunkelgrau und fast zeichnungslos. Das erwähnte Männchen unterscheidet sich aber genitalienmäßig kaum von den anderen Männchen aus der Mongolei (Abb. 7). Auf die beträchtliche Variabilität dieser Form und ihre nahe Beziehung zu der europäischen *G. streliciellum* wies ich schon hin (POVOLNÝ, 1969, p. 4–5; POVOLNÝ, 1973, p. 7). Jedenfalls handelt es sich um einen Formenkreis, der ebenfalls die nahen Beziehungen des nordmongolischen zu dem europäischen Arboreal nachweist.

Material: Chövsgöl aimak: 8 km W von Somon Burenchaan, am Fluß Delger mörön, 1450 m, 16. VII. 1968 (Nr. 1117), 2 ♂♂; 4 km NW von der Stadt Mörön, 1500 m, 19. VII. 1968 (Nr. 1128), 1 ♂. — Zavchan aimak: Choit chunch, 26 km ONO vom See Telmen nuur, 2150 m, 13. VII. 1968 (Nr. 1103), 1 ♂. — Bulgan aimak: SO von Somon Daschinčilen, 1050 m, 23. VII. 1968 (Nr. 1141), 1 ♂, alle von Z. KASZAB gesammelt. — Ulaanbaator, Sedivlin, 1500 m, 7. VI. 1965, leg. V. FELIX.

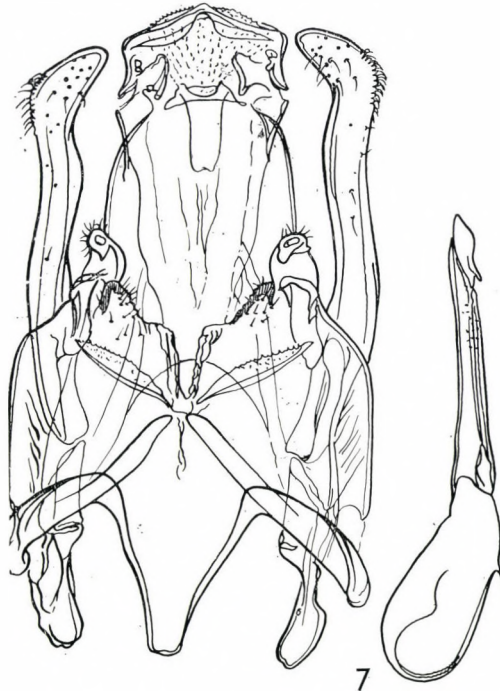


Abb. 7. *Gnorimoschema mongolorum* Pov. Genitalien des Männchens, Ulaan-Bator



**Zusammenfassung.** — In einer kleinen Ausbeute der Gnorimoschemini aus der Nordmongolei wurden zusammen 7 Arten entdeckt. Von diesen sind drei neu: *Lutilabria kaszabi* sp. n., *Scrobipalpa felixi* sp. n. und *Scrobipalpa arborealis* sp. n. Besonders die Entdeckung von *L. kaszabi* sp. n. bereichert wesentlich die Kenntnis der Tribus Gnorimoschemini, weil die Gattung *Lutilabria* Pov. bisher nur aus südeuropäischen Gebirgen bekannt war, wo sie durch die einzige Art *L. lutilabrella* (MN.) vertreten ist. Die übrigen zwei neuen Arten sind chorologisch offenbar ein Bestandteil des nordmongolischen Arboreals. Die Art *Scrobipalpa nitentella* (FUCHS) konnte zum ersten Male in der Mongolei nachgewiesen werden (bisher nur aus den Salinen Europas und Anatoliens bekannt). Das Material der übrigen Arten bestätigt weitgehend ihre bisherige systematische und zoogeographisch-chorologische Interpretierung. Zusammenfassend dürfte festgestellt werden, daß eine nahe Beziehung des Arboreals der Nordmongolei sowohl zum westpalaearktischen als auch zum ostpalaearktischen Arboreal besteht. Weiteres Material aus dem Norden des Landes dürfte diese Beziehung noch weiter klären. Dagegen ist die Steppenzone und vor allem die Wüstenzone der Mongolei wesentlich anders geprägt. Sie weist neben offenbaren Endemismen auch deutliche Beziehungen zum asiatischen Eremial auf.

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## TAXONOMISCHE UND FAUNISTISCHE UNTERSUCHUNGEN ÜBER DIE MONGOLISCHEN PLATYSTOMATIDEN (DIPTERA)\*

Von

Á. Soós

(Eingegangen am 3. Januar 1977)

Eleven Platystomatid species, found in the material (75 specimens) collected by Z. KASZAB during his six expeditions to Mongolia (1963—1968) are discussed; of them one genus (*Steyskaliella* gen. n.) and 6 species *Platystoma kaszabi* sp. n., *P. altaicum* sp. n., *P. mongolicum* sp. n., *P. mendax* sp. n., *P. centralasiaticum* sp. n., *Steyskaliella tuberculifrons* sp. n.) are new to science. There are added some taxonomic remarks of the genus *Platystoma* MEIG.

Im mongolischen Expeditionsmaterial von DR. Z. KASZAB konnten 76 Platystomatiden-Exemplare nachgewiesen werden. Von den 11 Arten, die 3 Gattungen angehören, erwiesen sich eine Gattung (*Steyskaliella* gen. n.) und 6 Arten (*Platystoma kaszabi* sp. n., *P. altaicum* sp. n., *P. mongolicum* sp. n., *P. mendax* sp. n., *P. centralasiaticum* sp. n., und *Steyskaliella tuberculifrons* sp. n.) neu für die Wissenschaft. Die bereits aus der Literatur bekannten übrigen 5 Arten sind ebenfalls neu für die Fauna der Mongolei. Das Typen-Material der neuen Arten wird in der Dipteren-Sammlung des Naturwissenschaftlichen Museums, Budapest, aufbewahrt.

Bei der Bestimmung des *Platystoma*-Materials wurden sämtliche Arten, die in den bisher gebräuchlichen Bestimmungsmerkmalen Abweichungen aufwiesen, als neue Taxa beschrieben. Dies an und für sich selbstverständliche Verfahren muß deswegen hervorgehoben werden, da einerseits die Variabilität der einzelnen Arten und die Tendenz zur Unterartbildung bekannt ist (also bei den Arten, von denen bisher ein größeres Untersuchungsmaterial zur Verfügung stand) und da andererseits, der größte Teil der bisher beschriebenen 40 paläarktischen Arten aufgrund eines Exemplars oder nur einiger Exemplare aufgestellt wurde (das bezieht sich insbesondere auf die aus dem asiatischen Teil des Paläarktikum beschriebenen Arten), so daß es bis jetzt eigentlich keinen verlässlichen Bestimmungsschlüssel für die Arten gibt, woraus hervorgeht, daß ein Teil der gebräuchlichen Bestimmungsmerkmale zur Identifizierung der Arten nicht ausreicht. So lange nicht genügend Material von den einzelnen Arten für die beinahe gänzlich fehlenden Genitaluntersuchungen zur Verfügung steht, läßt sich diese Frage meines Erachtens

\* Ergebnisse der zoologischen Forschungen von DR. Z. KASZAB in der Mongolei (Nr. 417).



nicht befriedigend klären. Um in Besitz von ausreichendem Material für Genitaluntersuchungen gelangen zu können und die artspezifischen Variationsgrenzen klären zu können, müssen entsprechende Sammelmethoden angewandt werden. Leider besitzen die größten Museen auch heute (mit Ausnahme einiger weniger Arten) von den meisten Arten nur ein bis zwei Exemplare. Die Erfahrungen von DR. Z. KASZAB haben gezeigt, daß mehrere *Platystoma*-Arten mit Bodenfallen, andere mit der Malaise-Falle erfolgreich gesammelt werden können, andere wiederum, die sich schwerfällig bewegen oder eine geringe Flugwilligkeit haben, bei Nacht von Licht angelockt werden (natürlich nicht anfliegen, sondern auf das belichtete Leintuch kriechen).

Für die Zusendung von Typen- und Vergleichsmaterial spreche ich auch an dieser Stelle Frau DR. E. P. NARTSCHUK (Leningrad), Frau DR. R. LICHTENBERG (Wien), Herrn Prof. DR. E. LINDNER (Ludwigsburg) und Herrn DR. H. SCHUMANN (Berlin) meinen besten Dank aus.

### 1. *Rivellia* ?*asiatica* HENNIG, 1945

HENNIG (1945): 48. *Platystomidae*. — in LINDNER: Die Fliegen der pal. Region, **5**: 8, Taf. I, Fig. 3.

Untersuchtes Material: Bulgan aimak: Namnan ul Gebirge, 23 km NW von Somon Chutag, 1150 m, 21. VII. 1968 (Nr. 1135), 1 ♀.

Aus der Gattung *Rivellia* ist nur ein einziges, sehr mitgenommenes Weibchen vorhanden. Leider sind die Flügel des Tieres untrennbar verklebt, beide beschädigt, so daß das Flügelmuster unerkennbar ist, obwohl bei den *Rivellia*-Arten gerade dieses Merkmal zum Auseinanderhalten der Arten unerlässlich ist. Aufgrund der Beschreibung und anhand des Bestimmungsschlüssels von HENNIG könnte dieses Tier zu *asiatica* HENN. gestellt werden, es ist jedoch auch möglich, daß es eine selbständige, der vorigen nahestehende Art ist. Diese Annahme ist auch deswegen schon berechtigt, da allein aus der Mandschurei nicht weniger als 6 Arten dieser Gattung bekannt geworden sind. Beiden Flügeln fehlt ein verschieden großer Teil der Flügelspitze, bzw. des hinteren Teiles, so daß von den Spitzenflecken nichts sicheres festgestellt werden kann. Im Vergleich mit der spärlichen Beschreibung von HENNIG (außer den Flügelmustern), kann festgestellt werden, daß die Färbung der Beine beim vorliegenden Tier nicht mit *asiatica* übereinstimmt. Denn die innere Seite des vorderen Schenkels ist braungelb und nicht schwarz, und nicht nur die beiden letzten Tarsenglieder sind dunkel, sondern am vorderen Bein außer dem Metatarsus sämtliche übrigen, während von den mittleren und hinteren Tarsengliedern die letzten drei dunkel sind. So lange weiteres Material nicht zur Verfügung steht, kann diese Frage nicht geklärt werden.

### 2. *Platystoma oculatum* BECKER, 1907

BECKER (1907): Ann. Mus. Zool. Acad. Imp. Sci. St-Pétersbourg, **12**: 282—283. — HENDEL (1913): Zool. Jahrb. Syst., **35**: 115—117. — HENNIG (1945): 48. *Platystomidae*. — in LINDNER: Die Fliegen der pal. Region, **5**: 47.

Untersuchtes Material: Gobi Altaj aimak: Zachuj Gobi, 10 km N von Chatan chajrchan Gebirge, 1150 m, 27. VI. 1966 (Nr. 592), aus Fliegenfallen mit Fäzes, 1 ♂. — Südgobi aimak: Nojon nuru Gebirge, Grenzposten Ovot Chuural, 1500 m, 20.—21. VI. 1967 (Nr. 826), mit Hilfe der »Malaise-Falle« gefangen, 2 ♂♂. — Bajanchongor aimak: Oase Echin gol, ca 90 km NO vom Grenzposten Caganbulag, 950 m, 27.—28. VI. 1967 (Nr. 855), 5 ♂♂, 1 ♀; ibid., 27.—29. VI. 1967 (Nr. 857), mit Hilfe der »Malaise-Falle« gefangen, 2 ♂♂, 3 ♀♀. — Central aimak: Tosgoni ovoo, 5—10 km N von Ulan-Baator, 1500—1700 m, 19.—20., 23.—24. VII. 1967 (Nr. 926), 1 ♂.

Sie unterscheidet sich von sämtlichen *Platystoma*-Arten durch die auf dem 4. (♀), bzw. 5. (♂) Tergit des Abdomens befindlichen zwei großen, gewölbten, schwärzlich-violetten glänzenden »Augenflecken«. Kennzeichnend für die Art ist noch das behaarte Scutellum, die Randzelle ( $R_3$ ) verengt sich in Richtung Flügelspitze so sehr, daß  $m$  weit über der Spitze des Flügels mündet, außerdem ist das Tier gänzlich graubraun. Die Art wurde von BECKER, später von HENDEL äußerst ausführlich und gut beschrieben, mir bleibt nur noch eine wesentliche Korrektur übrig. Soweit mir bekannt ist, sind von dieser Art nur 3 Typen-Exemplare vorhanden. Von den Syntypen befindet sich 1 ♂ und 1 ♀ im Zoologischen Institut der Akademie der Wissenschaften, Leningrad, 1 ♀ im Zoologischen Museum, Berlin. Die Richtigstellung bezieht sich darauf, daß der Augenfleck bei den Männchen weder auf dem 3. (BECKER) noch auf dem 4. (HENDEL, HENNIG), sondern auf dem vorderen Rand des 5. Tergites liegt. Die Deutung HENDEL's (1913: 116) ist deswegen überraschend, da er in einer Fußnote gesondert den Irrtum von BECKER korrigiert und trotzdem den Augenfleck auf dem 4. Tergit angibt. Aus der Beschreibung von HENNIG (1945: 47) geht hervor, daß er nur das weibliche Exemplar aus dem Zoologischen Museum, Berlin, gesehen hat, die Angaben bezüglich des Männchens wurden von HENDEL übernommen. Die Überprüfung der mir vorliegenden 15 Exemplare zeigte, daß diese Art — überhaupt nicht kennzeichnend für die Arten der Gattung *Platystoma* — in ihren Merkmalen fast nicht variiert. In den bisherigen Beschreibungen wird die Lunula überhaupt nicht erwähnt. Die Lunula von *oculatum* ist nicht nackt, es befinden sich am oberen Teil, oberhalb des Ansatzes der Fühler je zwei feine, kurze, schwarze Härchen. Diese kommen konstant bei allen untersuchten Exemplaren vor. Ein negatives Kennzeichen der Art ist das Fehlen der Pteropleuralborste; auf der Pteropleura stehen nur die gewöhnlichen langen, feinen hellgelben Haare.

### 3. *Platystoma kaszabi* sp. n.

♂. — Kopf gelb. Stirn einfarbig, ohne braune Flecken, spärlich schwarz behaart, in der Mitte mit einer feinen weißen Medianlinie und die Augenränder mit schmalen weiß bestäubten Streifen. Um  $1/3$  breiter als lang (11 : 8), doppelt so breit wie die Breite des Auges (11 : 5,5). Fühler inserieren unterhalb der Mitte der Augenhöhe (10 : 7), vorderer Augenwinkel bildet einen Stumpfwinkel (ca.  $120^\circ$ ). Oberer Teil des olivgelben Gesichtes weiß bereift, Gesichtskiel sehr breit, am unteren Teil der Fühlergruben je ein glänzender schwarzer Fleck, diese erreichen jedoch nicht den Mundrand; an den beiden lateralen Enden des Mundrandes ein nicht kräftiger brauner Fleck vorhanden. Praelabrum fettglänzend, schwarz, aber mittleres Drittel olivgelb, unten und oben schmal, weiß umrandet. Palpus matt, schwarz, aber das schmalere Basal- und breitere Spitzenende gelb. Parafazialien schmal, weiß bereift. Der sehr schmale Teil der Backen unterhalb der Augen pubeszent, Breite  $1/7$  der Augenhöhe (17,5 : 2,5). Hinterkopf gelb, aber außer einem rechteckigen Teil hinter dem Vertex silberweiß bereift. Fühler verhältnismäßig kurz, reichen nur bis zum unteren Drittel des Gesichtes. Bräunlichgelb, an der Basis des dorsalen Teiles vom 2. Fühlerglied ein schwarzer Fleck vorhanden, dorsaler Teil des 3. Fühlergliedes vor der Fühlerborste bereift. 3. Fühlerglied nicht ganz doppelt so lang wie breit, parallelkantig, am Ende plötzlich abgerundet. Fühlerborste hell, gelblichbraun, fein, aber kräftig pubeszent.

Grundfarbe des Thorax und Scutellum schwarz, aber auf dem Mesonotum und Scutellum ist die graue, auf den Pleuren die gelbe Bestäubung so stark, daß das Tier dadurch graugelb aussieht. Äußerst kennzeichnend für



die Art ist der entlang der Notopleuralnaht am oberen Rand der Pleuren sich von den Schulterschwielen bis zum basalen Teil der Flügel hinziehende, unbe-stäubte, markante gelbbraune Streifen, an dessen vorderem Teil ein länglicher schwarzer Fleck steht. Die Schulterschwielen sowie der hintere, eine Noto-pleuralborste tragende Höcker, ist braunlichgelb. Die schwarze Punktierung des Mesonotum ist äußerst fein und dicht. Die braune Punktierung der Mesopleura, der vorderen Pteropleura und die des oberen Teiles der Sternopleura ist bedeutend gröber, aber spärlicher als auf dem Mesonotum; der unbe-stäubte, gelblichbraune, längliche Streifen hingegen ist dicht behaart. Der übrige Teil der Pleuren ist nicht punktiert, stark tomentiert, auf dem größeren unteren Teil der Sternopleura und auf der Hypopleura schlägt die schwarze Grund-farbe stark durch. Scutellum grau tomentiert, am Rand gelb, unbehaart und unpunktiert, bloß die Fußpunkte der Scutellarborste mit je einem braunen Punkt.

Beine (einschließlich Hüften) schwach rotgelb, aber anterodorsal auf den vorderen Schenkeln ein kräftiger dunkler, schwarzbrauner Längsstreifen, auf den vorderen Schenkeln proximal posterior, auf den mittleren und hinteren Schenkeln zieht sich distal und anterior ein schwach graubrauner Längsstreifen hin. Sämtliche Knie glänzend schwarz. Vordere Schienen mit Ausnahme des Dorsalteiles, dunkelbraun; sämtliche (!) Tarsenglieder schwarz.

Flügel gleichmäßig braun, von dichtstehenden winzigen weißen Punkten durchbrochen, die Punkte besitzen keinen Zentralkern. Bloß entlang der Randader, bei der Einmündung von  $r_1$  und  $r_{2+3}$  befindet sich je ein kräftigerer brauner Fleck. Die  $r_{2+3}$  gerade, der Endabschnitt von  $r_{4+5}$  schwach S-förmige gebogen, der letzte Abschnitt der  $m$  stark gebogen und mündet weit oberhalb der Spitze des Flügels ein. Verhältnis  $m_3 : m_4$  wie 10 : 18;  $t_a - t_p : t_p$  wie 10 : 8, Thoraxschüppchen nahezu anderthalbmal so lang wie das Flügelschüppchen, Rand des letzteren braun. Schwinger vollkommen einfarbig gelb.

Die schwarze Grundfarbe des Abdomen wird durch die graue Tomen-tierung stark überdeckt. Die schwarzen Punkte sind größer als auf dem Mesonotum, teils einzelstehend, teils ein aus »Schriftzeichen« bestehendes Muster bildend. Der ganze hintere Rand des 1 + 2. und 3. Tergites und der mittlere Teil des 4. und 5. wird von einem schmalen Streifen umrandet. Das Längenverhältnis des 3., 4. und 5. Tergites beträgt 10 : 8 : 20, d. h. das 5. Tergit ist etwas länger als das 3. und 4. zusammen.

Körperlänge 8,2 mm, Flügellänge: 6,2 mm.

♀. — Obwohl nur ein einziges, ziemlich mitgenommenes Exemplar zur Verfügung stand, dem die 3. Fühlerglieder, die vorderen Beine sowie das mittlere Bein der rechten Seite fehlte, dessen Flügel beschädigt waren und auch die Bestäubung stark abgetragen aussah, konnte dennoch festgestellt werden, daß dieses Weibchen zum oben beschriebenen Männchen gehört, da es in allen wesentlichen Merkmalen mit diesem übereinstimmte. Es konnten

nur folgende, kleinere Unterschiede nachgewiesen werden: auf der linken Seite des Gesichtes, im unteren Teil der Fühlergrube ist der schwarze, glänzende Fleck mit dem Lateralfleck verschmolzen, der ebenfalls glänzend schwarz ist. Obwohl der Verbindungsteil braun erscheint, sehen die beiden Flecke auf der rechten Seite so aus wie beim Männchen; Praelabrum beinahe vollkommen olivgelb, da die Ausdehnung der beiden schwarzen Lateralflecken bedeutend kleiner ist als beim Männchen. Da Mesonotum und Abdomen stark abgerieben sind, sehen sie nicht hellbraun aus, sondern beinahe schwarz, deswegen erscheint der größere untere Teil der Sternopleura stark schwärzlich. Der ganze Hinterrand des 4. Tergites gelb. Verhältnis des 3., 4. und 5. Tergites wie 8 : 9 : 9, d. h. ungefähr gleichlang. Legrohrscheide dunkel gelbbraun.

Körperlänge (ohne Legrohr): 9,0 mm, Flügelänge: 6,4 mm.

Holotypus, ♂ »Mongolei: Bajanchongor aimak, Oase Echin gol, 90 km NO vom Grenzposten Caganbulag, 950 m. Exp. DR. Z. KASZAB 1967«, »Nr. 855, 27.—28. VI. 1967«. — Paratypus, ♀, Fundort wie beim Holotypus.

Die neue Art benenne ich zu Ehren meines lieben Freundes, nach Herrn Generaldirektor DR. Z. KASZAB, der während seiner Expeditionen in der Mongolei u. a. auch ein sehr umfangreiches und wertvolles Dipteren-Material sammelte.

*P. kaszabi* sp. n. gehört zweifelsohne der *suave* Formengruppe nach HENNIG an, obwohl man aufgrund des Bestimmungsschlüssels (1945: 15—18) nicht zu dieser Formengruppe gelangen kann. Durch die auffallend helle Farbe und die Flügelzeichnung erinnert sie an *suave suave* LOEW, 1873, unterscheidet sich jedoch von dieser in erster Linie durch die vollkommen schwarzen Tarsenglieder, durch den gelbbraunen Streifen, der sich unterhalb der Notopleuralnaht hinzieht, durch die andersartige Farbe des Gesichtes, Praelabrum und Abdomen, durch die Flecken sowie durch die abweichende Länge der Abdominaltergite.

#### 4. *Platystoma bipilosum* PORTCHINSKY, 1875

PORTCHINSKY (1875): Horae Soc. Ent. Rossicae, **11**: 32—33, Pl. II, Fig. 2. — BECKER (1912): Ann. Mus. Zool. Acad. Imp. Sci. St-Pétersbourg, **17**: 640.

= *bispilosum* (error) PORTCHINSKY. HENDEL (1913): Zool. Jahrb. Syst., **35**: 119—120, Taf. 2, Fig. 31. — HENNIG (1945): 48. Platystomidae. — in LINDNER: Die Fliegen der pal. Region, **5**: 32—33.

Untersuchtes Material. Mittelgobi aimak: Delgerchangaj ul, 6 km S von Somon Delgerchangaj, 1650—1700 m, 11. VI. 1967 (Nr. 786), 1 ♂ aus Äthylenglykol-Bodenfallen. — Südgobi aimak: Tachilga ul Gebirge, zwischen Somon Cogt-ovoo und Somon Dalanzadgad, 68 km S von Cogt-ovoo, cca. 1550 m, 12. VI. 1967 (Nr. 792), 1 ♂, aus Äthylenglykol-Bodenfallen.

Die beiden männlichen Exemplare stimmen in allen wesentlichen Merkmalen mit der Art von PORTCHINSKY überein, obwohl er die Art allein aufgrund eines einzigen Weibchens beschrieben hat. [»Des environs du mont Ararat (Caucase), où elle fut découverte par Mr. SVIRIDOV«.] Später erwähnt BECKER (1912) die Art, gibt jedoch nur an: »1 Männchen aus P.-Beludshistan, Umgebung von Kunscha. 6. V. 1901, ZARUDNY«. Der Holotypus befindet sich im Zoologischen Institut der Akademie der Wissenschaften, Leningrad, und wurde von mir untersucht (»Apapam« »*Platystoma bipilosa*« »Holotypus«). HENDEL (1913), der irrtüm-



licherweise die Art unter dem Namen »*bispilosum*« aufgrund der Beschreibung von PORTSCHINSKY erwähnt, hatte die beiden Exemplare nicht gesehen, bzw. besaß von letzterem überhaupt keine Kenntnis. HENNIG der sie in seiner Monographie (1945) als Unterart von *suave* LW., jedoch ebenfalls falsch *suave bispilosum*, erwähnt, sah die beiden Exemplare auch nicht, untersuchte hingegen aus der Sammlung des Zoologischen Museums, Berlin, ein Weibchen »aus Armenien (ohne nähere Fundortangabe)«. Dieses Exemplar wurde von mir ebenfalls untersucht, unter dem von BECKER gesammeltem Tier war folgende Etikette: »Armenien 50836« »*bipilosa* PORTSCH.«. Durch die freundliche briefliche Mitteilung von Herrn Kollegen Dr. H. SCHUMANN ist mir bekannt, daß im Tagebuch von BECKER außer der Zahl 50836, weiter keine Notizen stehen, d. h. kein näherer Fundort.

Bei den männlichen Exemplaren ist der schwarze Fleck auf dem Gesicht bedeutend größer als bei den Weibchen, sie besitzen nur 3 postgenale Borsten. Die Zeichnung der Flügel ist bedeutend kräftiger als bei den Weibchen. Die grauweiße Tomentierung des Abdomen bildet nahezu ein zusammenhängendes Netz. Das 5. Tergit ist gerade doppelt so lang wie das 3. und 4. zusammen (14 : 7).

Körperlänge (♂): 4,7–5,3 mm, Flügellänge: (♀): 4,7–5,3 mm.

### 5. *Platystoma altaicum* sp. n.

♂. — Der mittlere Teil der rostbraunen bzw. schwarzen Stirn fein, die beiden Seitenränder gröber punktiert; in der Mittellinie zieht sich ein sehr schmaler länglicher, entlang der Augen ein bedeutend breiterer, grauweißlich bestäubter Streifen hin. Die Stirn ungefähr um  $\frac{1}{3}$  breiter als lang (10 : 6,5) und um  $\frac{1}{5}$  breiter als die Breite der Augen (10 : 8). Gesicht bräunlichgelb, oberer Teil jedoch grau tomentiert, am unteren Teil der Fühlergrube befinden sich zwei große, glänzende schwarze Flecken, die den Mundrand nicht erreichen und die durch einen breiten Gesichtsrücken getrennt werden. Die glänzenden Backen sind auffallend breit, um  $\frac{1}{3}$  der Länge des vertikalen Augendurchmessers. Zwei starke schwarze postgenale Borsten vorhanden. Praelabrum schwarz, aber der querovale mittlere Teil rötlichbraun und mit Ausnahme des oberen mittleren Randteiles durch weißlichgraue Punktierung gesäumt. Palpus schwarz, matt, Spitzendrittel der äußeren Oberfläche silbergrau bereift. Hinterkopf, mit Ausnahme des schmalen rötlichgelben Teiles hinter dem Vertex, schwarz, entlang der Augen und oberhalb der Halsstufe grau bestäubt, unterer Teil fettglänzend. Fühler stehen unterhalb der Mitte der Augenhöhe, sind gelbbraun, aber das 3. Fühlerglied mit Ausnahme des ventralen Teiles ist schwarz, stark grau bestäubt. Fühlerborste dunkelbraun, nur mikroskopisch pubeszent.

Thorax und Scutellum schwarz, grau tomentiert, Mesonotum feiner, Mesopleura dichter und gröber punktiert, oberer Teil der Sternopleura ebenfalls punktiert. Hinterer Rand der Mesopleura rostrot, Humeralschwielen glänzend schwarz. Scutellum tomentiert, aber nicht punktiert.

Hüften und Beine rotbraun, der Basalteil aller Schenkel jedoch sowie die vorderen Schienen dunkelbraun, die mittleren und hinteren Schienen sind am distalen Ende dunkler. Alle Tarsenglieder der vorderen Beine schwarz; aber das schmale distale Ende vom Metatarsus des mittleren Beines und die

proximale Hälfte des 2. Tarsengliedes sind gelb, 3.—5. Tarsenglied dunkelbraun; Metatarsus und das 2. Tarsenglied der hinteren Beine gelb, 3.—5. Tarsenglieder dunkelbraun. In der distalen Hälfte der vorderen Schenkel befinden sich anteroventral 5 starke, schwarze Dorne.

Auf den mit verschiedenen großen Hyalinflecken versehenen Flügeln sind keine dunkelbraune Streifen, größere Flecken oder Hyalinstreifen vorhanden, bloß vor dem distalen Ende der Diskalzelle sowie entlang der Randader bei der Einmündung von  $r_1$  und  $r_{2+3}$  befindet sich je ein größerer brauner Fleck. Ader  $r_{2+3}$  gerade,  $r_{4+5}$  und  $m$  sind am Endabschnitt parallel, und die letztere mündet oberhalb der Flügelspitze. Verhältnis  $m_3 : m_4$  wie 9 : 15;  $t_a - t_p : t_p$  wie 9 : 6,5. Länge der Thoraxschüppchen nur um 1/4 länger als Flügelschüppchen. Halterenstiel hellgelb, -Kopf rötlichbraun.

Abdomen schwarz, grau tomentiert, mit Flecken ornamentiert, Form der Flecken äußerst verschieden. 5. Tergit doppelt so lang wie 3. und 4. zusammen.

Körperlänge: 6,5 mm, Flügellänge: 4,7 mm.

Holotypus, ♂ »Mongolei: Bajan-Ölgij aimak im Tal des Flusses Chavcalyn gol, 25 km O von Somon Cagannuur, 1850 m. Exp. DR. Z. KASZAB, 1968«, »Nr. 1056, 3. VII. 1968«.

Die neue Art steht *P. dimidiatum* HEND., 1913, am nächsten, unterscheidet sich von dieser durch die Farbe des Gesichtes und der Beine, durch die Zeichnung der Flügel und durch die auffallend breiten Backen.

#### 6. *Platystoma gilvipes* LOEW, 1868

LOEW (1868): Zeitschr. f. d. ges. Naturwiss., **32**: 10. — LOEW (1873): Beschreibung europäischer Dipteren, Halle, **3**: 286—287. — HENDEL (1913): Zool. Jahrb. Syst., **35**: 110—111, Taf. 2, Fig. 27. — HENNIG (1945): 48. Platystomidae. — in LINDNER: Die Fliegen der pal. Region, **5**: 30—31, Taf. II, Fig. 23.  
= *sororcula* PORTCHINSKY (1875): Horae Soc. Ent. Rossicae, **11**: 32, Pl. II, Fig. 1. — BECKER (1907): Ann. Mus. Zool. Acad. Imp. Sci. St-Petersbourg, **12**: 283—284.

Untersuchtes Material. — Chovd aimak: 10 km SSW von Somon Bulgan, 1200 m, 4.—6. VII. 1966 (Nr. 632), 3 ♂♂, 1 ♀ mit Hilfe der »Malaise-Falle« gefangen. — Südgobi aimak: SW-Rand des Sees Dund gol (am »alten« Somon Gurban-tes), 1300 m, 19. VI. 1967 (Nr. 818), 3 ♂♂, mit Hilfe der »Malaise-Falle« gefangen. — Bajanchoigor aimak: Oase Echin gol, ca. 90 km NO vom Grenzposten Caganbulag, 950 m, 27.—28. VI. 1967 (Nr. 855), 3 ♂♂, 3 ♀♀; ibid., 27.—29. VI. 1967 (Nr. 856), 1 ♀; ibid., 27.—29. VI. 1967 (Nr. 857), 10 ♂♂, 5 ♀♀, mit Hilfe der »Malaise-Falle« gefangen. — Central aimak: Tosgoni ovoo, 5—10 km N von Ulan-Baator, 1500—1700 m, 19., 20., 23.—24. VII. 1967 (Nr. 926), 1 ♂.

Bereits HENDEL (1913: 110) und HENNIG (1945: 30) heben in ihren Arbeiten hervor, daß die Art durch das vollkommen gelbe Gesicht leicht zu unterscheiden ist. Das Gesicht der mongolischen Exemplare ist ausnahmslos nicht rein gelb, sondern ausgesprochen olivgelb. Übrigens stimmen die mongolischen Exemplare in allen übrigen Merkmalen mit der Beschreibung von LOEW, HENDEL und HENNIG überein. Ich selbst hatte die Möglichkeit, mein Material mit dem Typenmaterial vergleichen zu können. Da von verschiedenen Fundorten 30 Tiere zur Verfügung standen, konnte festgestellt werden, daß es eine gut differenzierte Art ist, selbst die Farbe und die Zeichnung variieren kaum. Erwähnenswert ist die Tatsache, daß mehr als 2/3 des Materials mit der Malaise-Falle erbeutet wurde.



7. *Platystoma mongolicum* sp. n. (Abb. 1—2)

♂. — Kopf (Abb. 1) gelb, Stirn mit Ausnahme der Umgebung vom Ozellardreieck überall grob, braun punktiert, nur mit einer feinen, nicht scharf weiß pubeszenten Mittellinie; um  $1/4$  breiter als lang (10 : 7,5) und zweimal so breit wie die Breite der Augen. Oberer Teil des Gesichtes stark weiß bestäubt, am unteren Teil zieht sich ein breiter, glänzender schwarzer Längsstreifen hin, der nur bei dem Gesichtskiel den Mundrand erreicht, Mundrand ist beiderseits gelb. Praelabrum schwarz, aber am Rand schmal, weiß punktiert. Palpus schwarz, an der Basis gelb, Spitzenviertel stark grauweiß punktiert. Die lebhaft gelben Backen sind nicht bestäubt, ihre Breite nur  $1/3$  der Augenhöhe (13 : 3,5). Auf der Postgena entspringen zwei starke schwarze Borsten. Vorderer Augenrand biegt nahezu in einem Winkel von  $90^\circ$  nach hinten. Fühler steht auffallend unter der Mitte der Augenhöhe, im unteren Fünftel der Augenhöhe. Lunula unbeborstet. Fühler kurz, reichen nur bis zum unteren Drittel des Gesichtes, gelb, der größte Teil des 3. Fühlergliedes braun, 1. und 3. Glied grauweiß bestäubt, 2. glänzend. Fühlerborste fast nackt, nur mikroskopisch fein pubeszent. Hinterkopf, hinter dem Vertex gelb, an dessen unteren Teil ein matter schwarzer, rechteckförmige Fleck vorhanden, entlang des hinteren Augenrandes silberweiß bestäubt, im übrigen der ganze untere Teil des Hinterkopfes glänzend, schwärzlichbraun.

Thorax und Scutellum schwarz, grau tomentiert, fein punktiert. Die ganze Sternopleura punktiert. Entlang der Mesopleuralnaht und darunter auf der Sternopleura ein kleiner Fleck rostrot. Äußere Fläche der Humeralschwielen glänzend schwarz.

Grundfarbe der Schenkel bräunlichgelb, doch das verdunkelt sich in verschiedenem Maße; es können auf der vorderen und hinteren Fläche einesteils länglichebraunschwarze Streifen erscheinen, andererseits ausgebreitete schwarzbraune; selten sind fast sämtliche Schenkel dunkel braunschwarz; die dunklen Teile sind grauweiß bestäubt. Vordere Schienen schwarz, Grundfarbe der mittleren und hinteren Schienen ebenfalls bräunlichgelb, distales Ende immer dunkler, aber auch auf ihnen können längere oder kürzere schwarzbraune Streifen vorkommen. Wie veränderlich die Farbe der Schenkel und Schienen sein kann, so beständig ist die der Tarsen. Sämtliche Tarsenglieder der vorderen Beine, — die 2.—5. Tarsenglieder der mittleren und hinteren Beine sind immer dunkel, — bräunlichschwarz. Metatarsus der mittleren und hinteren Beine ist, mit Ausnahme des braunen distalen Endes, weißlichgelb, an der Dorsalseite des hinteren Metatarsus zieht sich noch ein hellbrauner länglicher Streifen hin.

Die weißen Flecke des Flügels (Abb. 2) sind verhältnismäßig groß, Zentralkerne fehlen. Braune Zeichnung kräftig, zwei äußerst markante braune Querstreifen ziehen sich vor und hinter  $t_p$  entlang, ferner befindet sich noch ein größerer brauner Fleck auf der Flügelspitze, bei der Einmündung der  $r_{4+5}$

und *m.* Verhältnis  $m_3 : m_4$  wie 6 : 12,  $t_a - t_p : t_p$  wie 6 : 6! Rand der Flügelschüppchen schwach gelb, Thoraxschüppchen ungefähr um 1/4 länger als Flügelschüppchen. Halteren einfarbig, schmutzig weiß oder schwach gelb.

Abdomen glänzend schwarz, weiß tomentiert, Punkte sind meistens zu einem schriftzeichenförmigen Muster verschmolzen. 5. Tergit nur etwas kürzer als 3. und 4. zusammen (14 : 15), 3. Tergit nur etwas länger als 4. (8 : 7).

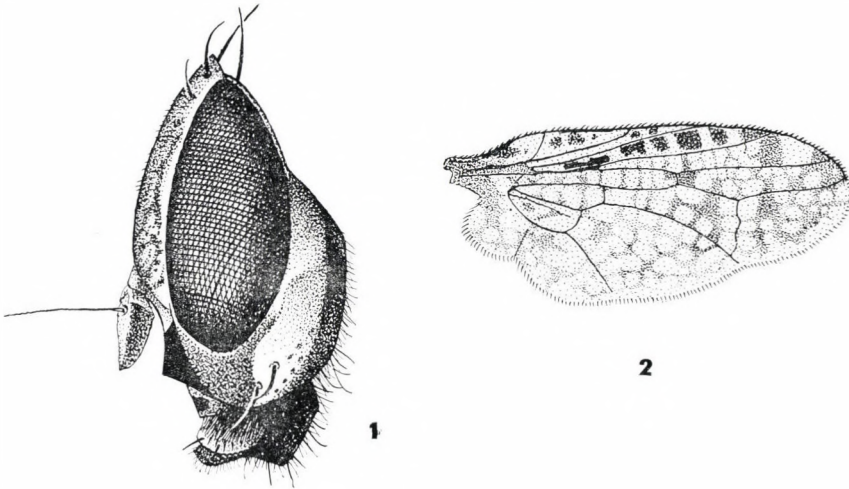


Abb. 1—2. *Platystoma mongolicum* sp. n. ♂. 1 = Kopf von der Seite gesehen, 2 = Flügel (del. M. CSIBY)

Körperlänge (Holotypus): 6,1 mm, Flügellänge: 4,3 mm. Paratypen Körperlänge: 5,9—6,1 mm, Flügellänge: 3,8—4,4 mm.

♀. — Abgesehen vom Abdomen stimmt es in allen wesentlichen Merkmalen mit dem Männchen überein. Bei den meisten Weibchen kann noch eine 3., aber bedeutend schwächere postgenale Borste vorhanden sein, und auch der braune Spitzenfleck ist nicht so intensiv wie bei den Männchen. Abdomen glänzend schwarz, weiß tomentiert, spärlich punktiert, die Punkte sind nicht miteinander verschmolzen. Hinterer Rand des 5. Tergites in verschiedenem Maße rostrot, gelblichbraun. 4. Tergit am längsten, 3. am kürzesten, Verhältnis des 3., 4. und 5. Tergites wie 4 : 8 : 5.

Körperlänge (ohne Legrohr): 4,7—6,1 mm, Flügellänge: 3,7—4,4 mm.

Holotypus, ♂ »Mongolei: Uvs aimak, am See Bag nuur, 6 km NO von Somon Zuungobi, 1000 m, Exp. Dr. Z. KASZAB, 1968«, »Nr. 1015, 25. VI. 1968«. — Paratypen: Mittelgobi aimak: 70 km SW von Somon Erdenedalaj, 1400 m, 16. VI. 1964 (Nr. 139), 2 ♂♂, auf Fäzes mit Fangnetz gesammelt; Choot bulag, zwischen Somon Chuld und Somon Delgerchangaj, 38 km ONO von Delgerchangaj, 1480 m, 10. VI. 1967 (Nr. 782), 4 ♀♀ aus Äthylenglykol-Bodenfallen. — Central aimak: 12 km S von Somon Bajanbaraat, 1380 m, 8. VI. 1967 (Nr. 774), 1 ♂, 1 ♀, aus Äthylenglykol-Bodenfallen. — Südgobi aimak: Tachilga ul



Gebirge, zwischen Somon Cogt-ovoo und Somon Dalanzadgad, 68 km S von Cogt-ovoo, 1550 m, 12. VI. 1967, (Nr. 792), 1 ♂, aus Äthylenglykol-Bodenfallen; SW-Rand des Sees Dundgol (am »alten« Somon Gurban-tes), 1300 m, 19. VI. 1967 (Nr. 818), 1 ♀, mit Hilfe der »Malaise-Falle« gefangen; ibid. (Nr. 819), 1 ♀.

Die neue Art gehört zur Formengruppe *canum* HENNIG und steht der Art *canum clathratum* HENDEL, 1913, am nächsten, doch besitzt sie auch viele gemeinsame Merkmale mit *meridionale* HENDEL, 1913; das weist darauf hin, daß eine Trennung der beiden Artengruppen, also der *canum* und *meridionale* allein aufgrund des Verbreitungsgebietes, wahrscheinlich nicht weiter aufrecht erhalten werden kann. Die neue Art *mongolicum* sp. n. unterscheidet sich in der Farbe der Tarsenglieder und Praelabrum, in der Zeichnung des Flügels, in der Breite der Backen, in dem nach hinten gebogenen vorderen Augenrand mit einem Winkel von 90°, ferner dadurch, daß die Fühler sehr tief stehen, gleicherweise von *canum clathratum* HEND. wie von *meridionale* HEND. äußerst kennzeichnend.

### 3. *Platystoma mendax* sp. n. (Abb. 3—4)

♂. — Kopf (Abb. 3) bräunlichgelb. Stirn rotbraun, spärlich dunkel punktiert, in der Mittellinie mit einem etwas breiteren, entlang der Augenränder mit einem sehr schmalen, weißen, bestäubten Streifen, um 1/3 breiter als lang (11 : 7,4), Breite der Augen um 1/5 schmäler als die Breite der Stirn. Augen nahezu oval, vorderer Augenwinkel kaum zu erkennen, in einem Winkel von 150° nach hinten gebogen. Fühler stehen in der Mitte der vertikalen Augenhöhe. Der obere Teil des bräunlichgelben Gesichtes ist silbergrau bestäubt, unterer Teil glänzend schwarz, aber bei dem Gesichtskiel grauweiß bereift; der schwarze Streifen erreicht den Mundrand nicht. Mundrand ist beiderseits ausgebreitet bräunlichgelb. Backen sehr schmal, ihre Breite beträgt 1/9 der Augenhöhe. Auf der Postgena 5 lange, kräftige schwarze Borsten. Praelabrum glänzend schwarz, der Rand im Kreis weiß punktiert. Palpus matt, schwarz, vorderer Rand gelb, silberweiß bestäubt. Hinterkopf, hinter dem Vertex rotgelb, im übrigen schwarz, spärlich grauweiß bestäubt, aber der Teil hinter der Postgena unten olivgelb, fettglänzend. Fühler bräunlichgelb, aber der obere Rand des 1. und 3. Gliedes innen und außen, der Spitzenteil und der Basalteil der Fühlerborste dunkler, grau pubeszent. Wurzel der mikroskopisch fein pubeszenten Fühlerborste stark verdickt (beim Typus fehlt das rechte 3. Fühlerglied).

Thorax und Scutellum schwarz, grau tomentiert gefleckt, Scutellum fleckenlos, aber der Rand grauweiß tomentiert. Auf den Pleuren graue Tomen-tierung zu Linien verschmolzen, gitterartiges Muster bildend. Sternopleura ohne Flecke.

Hüften, vordere und mittlere Schenkel gelb, hintere Schenkel braun, vordere Schienen und Tarsenglieder schwarz, eine Ausnahme bildet das 5. Tarsenglied. Mittlere und hintere Schienen braun, mittlerer Metatarsus weißlichgelb, jedoch distales Ende und die 2.—4. Tarsenglieder dunkelbraun, 5. Glied gelb, hinterer Metatarsus und das 2. Tarsenglied bräunlichgelb, 3. braun, 4. dunkelbraun (dies ist das dunkelste Glied) und auch das 5. Glied ist gelb. Sämtliche Knie sind glänzend schwärzlichbraun.

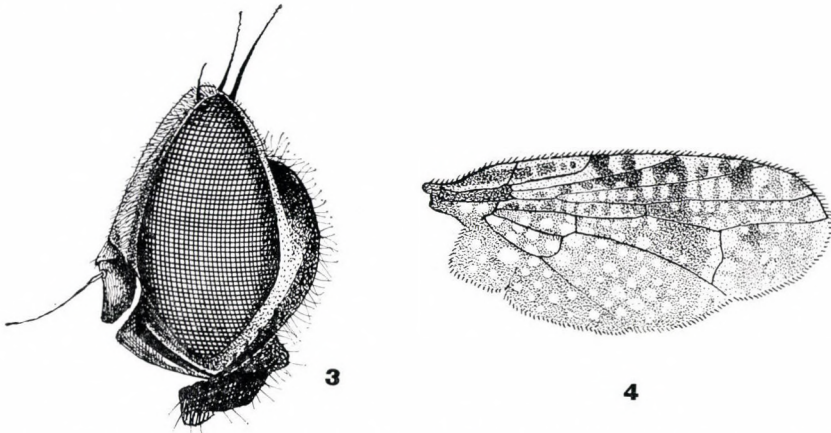


Abb. 3—4. *Platystoma mendax* sp. n. ♂. 3 = Kopf von der Seite gesehen, 4 = Flügel (del. M. CSIBY)

Die dunkelbraune Grundfarbe des Flügels (Abb. 4) wird von grauen Flecken, die starke Zentralkerne enthalten, durchbrochen. Vor  $t_p$  zieht sich von der Randader bis zum hinteren Rand des Flügels ein brauner Streifen ohne helle Flecken hin. Hinter  $t_p$  befindet sich ein ähnlicher, jedoch nicht so ausgesprochen brauner Streifen; die Fläche zwischen den beiden ist hell, größtenteils wird sie von schmalrändigen Flecken gebildet. Die  $r_{2+3}$  gerade,  $r_{4+5}$  und  $m$  laufen parallel aus,  $m$  mündet unmittelbar oberhalb der Flügelspitze. Verhältnis  $m_3 : m_4$  wie 7 : 13,  $t_a - t_p : t_p$  wie 7 : 5,  $t_p$  im Winkel gebrochen. Rand der Flügelschüppchen braun. Thoraxschüppchen um  $1/4$  länger als Flügelschüppchen. Halterenstiel gelb, -Kopf graubraun.

Abdomen schwarz, meistens mit spärlicher grauer punktförmiger Tomentierung. 5. Tergit so lang wie 3. und 4. zusammen. Längenverhältnis der 3.—5. Tergite 5 : 5 : 10. Genitalsegmente schwarzbraun, glänzend, stark behaart.

Körperlänge: 5,2 mm, Flügellänge: 4,3 mm.

Der einzige männliche Paratypus, abgesehen davon, daß er bedeutend größer ist (6,9 mm) unterscheidet sich vom Holotypus dadurch, daß 1. am unteren Teil des Gesichtes der glänzende schwarze Streifen nicht einheitlich,



sondern zweigeteilt ist, 2. sämtliche Schenkel, mittlere und hintere Schienen gelblichbraun sind, ventral auf den mittleren und hinteren Schenkeln, sich auf den Schienen anterior ein gelblichbrauner Streifen hinzieht, 3. das 3. Tergit länger ist als das 4. (6 : 5), beide zusammen sind jedoch so lang wie das 5. Tergit.

♀. — In allen wesentlichen Merkmalen mit dem Männchen übereinstimmend. Am unteren Teil des Gesichtes befindet sich ein schwarzer Streifen, so wie beim Holotypus, bloß bei einem Exemplar (Nr. 573), wie beim männlichen Paratypus, unterbrochen; die Farbe der Schenkel und der mittleren und hinteren Schienen stimmt mit dem Paratypus überein. Das glänzende schwarze Abdomen ist selten weiß gefleckt, das 5. Tergit gewöhnlich mit querstehenden Linien, die übrigen Tergite punktiert. 4. Tergit am längsten, 5. am kürzesten. Verhältnis des 3.—5. Tergites wie 8 : 9 : 5,5. Legrohrscheide schwarz, Endglied des Legrohres und Cerci bräunlichgelb.

Körperlänge (ohne Legrohr): 5—7,5 mm, Flügelänge: 4,4—5,3 mm.

Holotypus, ♂ »Mongolei: Chovd aimak, Mongol Altaj Gebirge, Uljasutajn gol, 45 km NNO von Somon Bulgan, 1400 m, Exp. DR. Z. KASZAB, 1966«, »Nr. 639, 6.—7. VII. 1966«, mit Hilfe der »Malaise-Falle« gefangen. — Paratypen: G o b i A l t a j a i m a k : Zwischen Schargyn Gobi und Beger nuur, ca. 20 km O von Somon Chaliun, 1700 m, 25. VI. 1966 (Nr. 573), 1 ♀, mit Hilfe der »Malaise-Falle« gefangen. — C h o v d a i m a k : Mongol Altaj Gebirge, Uljasutajn gol, 45 km NNO von Somon Bulgan, 1400 m, 6.—7. VII. 1966 (Nr. 639), 1 ♂, 1 ♀, mit Hilfe der »Malaise-Falle« gefangen; Mongol Altaj Gebirge, ca. 35 km N von Somon Uenč, 1750 m, 8. VII. 1966 (Nr. 646), 3 ♀♀.

*P. mendax* sp. n. steht den Arten *P. dimidiatum* HEND., 1913 und *P. meridionale* HEND., 1913 am nächsten. Die neue Art konnte mit dem Typenmaterial der beiden vorher erwähnten Arten verglichen werden. *P. mendax* sp. n. steht *dimidiatum* HEND. näher und unterscheidet sich von dieser hauptsächlich durch die Farbe der Tarsenglieder und des Flügels, bzw. durch die Zeichnung (diesbezüglich stimmt sie mit der Zeichnung von *P. gilvipes* Lw. fast überein). *P. dimidiatum* HEND., von der bisher nur das Weibchen bekannt ist, ist kleiner als die neue Art. Von *P. meridionale* HEND. unterscheidet sie sich in der Augenform, in der Stellung der Fühler, in der Breite der Backen, in der Zahl der postgenalen Borsten, in der Farbe der Beine und Flügel sowie in den Flügelzeichnung.

### 9. *Platystoma plantationis* (RONDANI, 1869)

RONDANI (1869): Dipterol. Ital. Prodrom., 7 (3): 35 (*Megaglossa*). — HENDEL (1913): Zool. Jahrb. Syst., 35: 100—102, Taf. I, Fig. 21. — HENNIG (1945): 48. Platystomidae. — in LINDNER: Die Fliegen der pal. Region, 5: 35, Taf. II, Fig. 18.

Untersuchtes Material. — S ü d g o b i a i m a k : SW-Rand des Sees Dund gol (am »alten« Somon Gurban-test), 1300 m, 19. VI. 1967 (Nr. 819), 1 ♂.

Diese Art war bisher nur aus Süd-Europa und Ungarn bekannt. Das einzige männliche Exemplar aus der Mongolei stimmt in allen wesentlichen Merkmalen mit den europäischen Tieren überein, obwohl es weit entfernt von dem bisher bekannten Verbreitungsgebiet gesammelt wurde. Die Beschreibung von HENNIG muß insofern korrigiert werden, daß nicht

der ganze Fühler, sondern nur das 2. Glied rostbraun ist, und das 1. und 3. Fühlerglied sind grauschwarz. (So ist auch der Fühler der ungarischen Exemplare gefärbt.) Kennzeichnend ist ferner noch, daß bei den mongolischen Exemplaren die Lunula dicht behaart ist (bei den ungarischen Tieren variiert dieses Merkmal, von einer dichten bis zu einer spärlichen Behaarung). Ergänzend sei noch erwähnt, daß 3, ausnahmsweise 4 postgenale starke, schwarze Borsten vorhanden sind.

# 10. *Platystoma centralasiaticum* sp. n.

♀. — Kopf bräunlichgelb. Rotbraune Stirn dicht braun punktiert, in der Mittellinie der Stirn und entlang der Augen zieht sich ein sehr schmaler grauweißer Streifen hin; um  $\frac{1}{3}$  breiter als lang (11 : 7,5) und nahezu doppelt so breit wie die Augen (11 : 6). Vorderer Augenrand biegt nahezu in einem Winkel von  $120^\circ$  nach hinten. Fühler stehen unterhalb der Mitte der Augenhöhe. Gesicht mit breitem Gesichtskiel, oberer Teil grauweiß bestäubt, und dieser erreicht in der Mittellinie keilförmig den Mundrand. Unterer Teil des Gesichtes glänzend schwarz. Praelabrum glänzend schwarz, die dorsolateralen Winkel jedoch sind gelblichbraun und die breiteren lateralen Ränder weiß bereift, je ein ähnlicher Fleck am oberen Rand beiderseits der Mittellinie, die sich mit dorsolateralen gelblichbraunen Flecken berühren. Palpus matt, schwarz, Spitze silberweiß bestäubt, gänzlich stark behaart. Breite der glänzend gelblichbraunen Backen  $\frac{1}{5}$  der Augenhöhe. Hinterkopf ist mit Ausnahme des rotgelben Fleckens hinter dem Vertex schwarz, entlang des hinteren Augenrandes und oberhalb der Halsstufe silberweiß bestäubt. Drei kräftige, schwarze postgenale Borsten vorhanden. 1. Fühlerglied stark grau bereift, 2. Fühlerglied glänzend, gelblichbraun, stellenweise bestäubt, 3. Fühlerglied schwarz, stark weißlichgrau bestäubt, aber ventraler Teil der Basis bräunlichgelb. Fühlerborste vollkommen nackt, selbst mikroskopisch fein nicht pubeszent.

Thorax und Scutellum schwarz tomentiert und punktiert, Scutellum und Sternopleura hingegen nicht punktiert.

Beine (einschließlich Hüften) beinahe vollkommen schwarz, die mittleren und hinteren Hüften und Knie gelblichbraun, Metatarsen der mittleren Beine, abgesehen vom schmalen distalen Ende, gelblichweiß. Der dorsale Basalteil der Metatarsen von den hinteren Beinen sowie der ventrale Teil des ganzen Metatarsus und das 2. Tarsusglied rötlichgelb.

Der Flügel wird von verhältnismäßig wenigen, aber großen, hellen, grauweißen Flecken durchbrochen, die keine Zentralkerne besitzen. Äußerst kennzeichnend ist der vor und hinter  $t_p$  durch den ganzen Flügel sich hinziehende braune Streifen und der zwischen den beiden Streifen sich befindliche, beinahe fleckenlose helle Streifen. Außer diesen sind noch entlang der Randader braune Flecken, von denen ist der oberhalb der Flügelspitze am auffallendsten, während der größte Teil des Flügels, abgesehen von den beiden erwähnten Streifen, keine dunklen Flecken besitzt. Ende von  $r_{2+3}$  erreicht etwas nach oben gebogen die Randader,  $r_{4+5}$  und  $m$  verlaufen im Endabschnitt nahezu



parallel,  $m$  mündet weit oberhalb der Flügelspitze ein. Verhältnis  $m_3 : m_4$  wie 8 : 18,  $t_a - t_p : t_p$  wie 8 : 7,  $t_p$  im Winkel gebrochen. Flügel und Thoraxschüppchen vollkommen weiß, Thoraxschüppchen ungefähr doppelt so lang wie Flügelschüppchen. Halterenstiel bräunlichgelb, -Kopf dunkel gräulichbraun.

Grundfarbe des Abdomens sowie beim Thorax schwarz, tomentiert und punktiert. Punkte isoliert, verhältnismäßig dicht und gleichmäßig verteilt. 4. Tergit etwas länger als 3. oder 5. (10 : 12 : 10). Legrohrscheide schwarz, dorsaler mittlerer Teil gelblichbraun aufgehell.

Körperlänge (ohne Legrohr): 7—8 mm, Flügellänge: ca. 6 mm.

Die Exemplare der Paratypen weisen darauf hin, daß die Art in erster Linie in der Ausbildung der Thoraxschüppchen, in der Ausdehnung des schwarzen unteren Streifens des Gesichtes und in der Farbe der Tarsenglieder variiert.

Männchen unbekannt.

Holotypus, ♀ »Mongolei: Mittelgobi aimak, Delgerchangaj ul, 6 km S von Somon Delgerchangaj, 1650 m, Exp. DR. Z. KASZAB, 1967«, »Nr. 908, 11. VII. 1967«. — Paratypen: U v s a i m a k : Senke des Sees Uvs nuur, am SW-Rand des Sees, 84 km W von Somon Zuungobi und 63 km O von der Stadt Ulaangom, 790 m, 26. VI. 1968 (Nr. 1024), 1 ♀, nachts bei Lampenlicht gesammelt; Mogoin arshaan, N-Rand des Sees Chjargas nuur, 48 km OSO von Somon Narabulag, 1100 m, 9. VII. 1968 (Nr. 1087), 1 ♀, nachts bei Lampenlicht gesammelt.

Die neue Art steht im Sinne von HENNIG der *seminationis rufimana* Lw., 1873, am nächsten, obwohl man aufgrund des Bestimmungsschlüssels bei diesen Exemplaren nicht zur *seminationis*-Gruppe gelangen kann. Die neue Art unterscheidet sich von ihr durch die andersartige Farbe der Tarsenglieder, durch die Ausbildung der Thoraxschüppchen und durch die andersartige Flügelzeichnung.

### Steyskaliella gen. n.

D i a g n o s e : Kopf so hoch wie lang und um 1/4 der Höhe breiter als hoch. Stirn nicht eben sondern vorderer Teil stark gewölbt (wie z. B. bei den Arten der Gattung *Lamprophthalma* PORTSCHINSKY, 1892, *Peltacanthina* ENDERLEIN, 1912, oder *Lamprogaster* MACQUART, 1843). Mundrand stark nach oben gebogen und tief geschwungen. Kräftig sind von den Kopfborsten *vte* und *vti*, schwach ist das 1 Paar *ors*, und verkümmert *oc* und *pvt*. Hinterkopf gepolstert, mit markanter Halsstufe. Behorftung des Thorax: 1 *h*, 2 *n*, 1 *sa*, 2 *pa*, 1 *dc*, 1 *prsc*, 1 *m*, 0 *pt*, 3 Paar *sc* und auf dem vorderen Rand des Thorax, zwischen den Humeralschwielen in einer Reihe 2—3 starke Borsten. In der distalen Hälfte der vorderen Schenkel, anteroventral 6 kräftige Borsten. Flügel glasartig durchsichtig und mit gelblichbraunen Streifen, bzw. unter der Costa von der Basis des Flügels bis zur Einmündung von  $r_1$  winzige braune

Punkte vorhanden. Diesbezüglich erinnert sie an die Arten der Gattung *Lamprogaster* MACQ., oder vielmehr an die von Mezona SPEISER, 1910.

Typische Art: *Steyskaliella tuberculifrons* sp. n.

Die neue Gattung steht in erster Linie der Gattung *Platystoma* MEIGEN, 1803, am nächsten, unterscheidet sich von dieser in folgenden Merkmalen:

**Platystoma** MEIG.

**Steyskaliella** gen. n.

- |  |   |
|--|---|
| 1. Kopf immer höher als lang (Verhältnis meistens 3 : 2)   | 1. Kopf ebenso hoch wie lang (1 : 1)  |
| 2. Oberfläche der Stirn immer eben   | 2. Vorderer (unterer) Teil der Stirn stark gewölbt  |
| 3. Fühler stehen in der Hälfte der Augenhöhe oder darunter   | 3. Fühler stehen oberhalb der Mitte der Augenhöhe   |
| 4. Den hellen oder dunkelbraunen Flügel durchbrechen weiße Punkte oder Flecken gitterförmig (Mit Ausnahme der Art <i>chrysotoxum</i> HEND.*) | 4. Flügel glasartig durchsichtig, mit gelblichbraunen Streifen, bzw. entlang der Randader mit winzigen braunen Flecken. |
| 5. In der distalen Hälfte der vorderen Schenkel des Weibchens, anteroventral keine kräftigen Dornen  | 5. In der distalen Hälfte der vorderen Schenkel des Weibchens, anteroventral 6 kräftige Dorne                           |

**11. *Steyskaliella tuberculifrons* sp. n. (Abb. 5—6)**

♀. — Kopf (Abb. 5) bräunlichgelb. Der obere Teil der gelben Stirn ist eben, weiß bestäubt, mit nur spärlichen gelben Punkten, aus denen kurze, schwarze Haare entspringen, vorderer Teil der Stirn höckerförmig stark gewölbt, nicht pubeszent, nur auf dem mittleren Teil stehen einige kurze schwarze Härchen. Stirn nicht ganz doppelt so breit wie lang (11 : 6,5) und anderthalbmal so breit wie die Breite der Augen (11 : 7,5). Gesicht olivgelb, glänzend, bloß die Fühlergruben weiß bereift. Auch der sehr breite Gesichtsrücken ist glänzend. Unter den Fühlergruben je ein bräunlichschwarzer Fleck vorhanden, die den Mundrand erreichen, Entfernung zwischen ihnen doppelt so groß wie der Durchmesser der Flecken. Mund sehr weit, tief eingeschnitten, der Rand stark nach oben gebogen. Praelabrum olivgelb, aber im oberen Mittelteil und an den beiden Lateralrändern je ein bräunlichschwarzer Fleck, vor den letzteren noch je ein silberweiß punktierter Fleck vorhanden. Palpus bräunlichgelb, mittleres Drittel dunkelbraun, Spitzendrittel spärlich grau bestäubt. Backen sehr breit, ihre Breite entspricht 1/3 der Augenhöhe (14 : 4,5). Sieben kräftige Backenborsten vorhanden. Auf dem Hinterkopf, hinter dem Vertex ein gelber, rechteckiger Fleck, der obere Teil des Hinterkopfes ist im übrigen schwarz, aber stark silberweiß bestäubt. Unterer Teil des Hinterkopfes olivgelb, fettglänzend. Fühler stehen oberhalb der Mitte der Augenhöhe, Fühler bräunlichgelb; 1. und 2. Fühlerglied glänzend, der größere dorsale Teil des 3. Gliedes

\* Aufgrund meiner vergleichenden Untersuchungen kann *Platystoma chrysotoxum* HEND., nicht in die Gattung *Platystoma* eingereiht werden, für sie muß eine neue Gattung aufgestellt werden.



schwärzlich, das ganze grau bestäubt. Wurzel der Fühlerborste dick und nur mikroskopisch spärlich pubeszent.

Grundfarbe des Thorax und Scutellum schwarz, aber sehr stark tomentiert. Mesonotum grau pubeszent, vor der Quernaht jedoch zieht sich ein schmalerer, weniger einheitlicher, hinter der Quernaht hingegen ein breiter, sehr einheitlicher, goldgelb bestäubter Querstreifen hin. Mesonotum nur auf

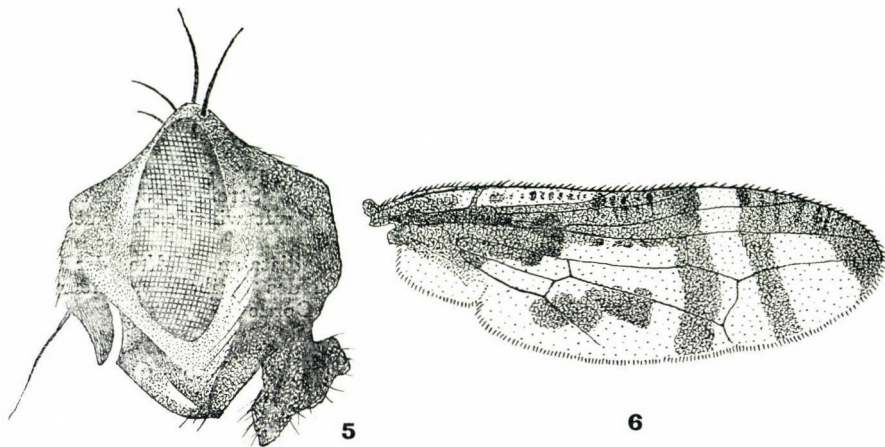


Abb. 5—6. *Steyskaliella tuberculifrons* sp. n. ♀. 5 = Kopf von der Seite gesehen, 6 = Flügel (del. M. CSIBY)

diesen Streifen punktiert, auf dem grau pubeszenten Teil des Mesonotum befindet sich nur an der Basis der Macrochaeten schwarze Flecke. Pteropleura, Mesopleuralnaht und der obere mittlere Teil der Sternopleura bräunlichgelb, die Pleuren sind übrigens schwarz, stark grauweiß bestäubt, Mesopleura gänzlich, Sternopleura, mit Ausnahme des schwarzbraunen ventrolateralen Teiles, grob, spärlich punktiert. Humeralschwielen lebhaft gelb, glänzend, zwischen ihnen am Vorderteil des Mesonotum in einer Reihe 2—3 kräftige Borsten. Pteropleurale Borste fehlt.

Hüften und Beine hell bräunlichgelb, aber sämtliche Tarsenglieder des vorderen Beines, 3.—5. Tarsenglieder der mittleren und hinteren Beine bräunlichschwarz. In der distalen Hälfte der Schenkel der vorderen Beine befinden sich anteroventral 6 kräftige schwarze Dorne.

Flügel lang und schmal, dreimal so lang wie breit (15 : 5), glasartig durchsichtig und mit bräunlichgelben Streifen, bzw. unter der Randader von der Basis der Flügel bis zur Einmündung von  $r_1$  mit kleinen braunen Punkten ornamentiert (Abb. 6). Ein Querstreifen durchquert  $t_a$ , einer ist hinter  $t_p$ , aus dem oberen Teil des letzteren zieht sich ein ähnlich breiter Streifen entlang der Costa bis unter die Flügelspitze, außer denen befinden sich dort noch zwei längliche Streifen: einer beginnt an der Flügelbasis und zieht sich unter  $r_1$

hin und erreicht den vorderen Querstreifen, der andere ist bedeutend kürzer, geht von der *Cu* aus, erreicht aber den vorderen Querstreifen nicht. Verhältnis  $m_3:m_4$  wie 6:18! und  $t_a - t_p:t_p$  wie 6:6! Thoraxschüppchen anderthalbmal so lang wie Flügelschüppchen. Halterenstiel hellgelb, -Kopf zum Teil graubraun.

Abdomen glänzend schwarz, die Grundfarbe wird jedoch von der sehr starken silbergrauen Tomentierung verdrängt, erscheint nur als sehr feine Punktierung (die Abgeriebenheit darf nicht berücksichtigt werden). Tergite 1 + 2 ziemlich ausgebreitet rostrot aufgehellt. Hinterer Rand des 4. Tergites kaum, 5. stark gelb umrandet. Verhältnis des 3.—5. Tergites wie 3:5:3,5. Legrohrscheide zum größten Teil rotgelb, aber distales Ende bräunlichschwarz.

Körperlänge (ohne Legrohr): 5,3 mm, Flügelänge: 5,3 mm.

Der einzige weibliche Paratypus stimmt in allen Merkmalen mit dem Holotypus überein, bloß in der Intensität und Ausbreitung der Farbe der Tarsenglieder und des 1. + 2. Tergites gibt es unwesentliche Unterschiede, ferner befindet sich hinter der oralen Backen-Borstenreihe noch eine zweite Reihe mit 2—3 kräftigen Borsten (Abnormität?). Maße stimmen mit denen des Holotypus überein.

Männchen unbekannt.

Holotypus, ♀ »Mongolei: Archangaj aimak: Changaj Gebirge, 8 km W von Somon Urdtamir, 1620 m, Exp. DR. Z. KASZAB, 1966«, »Nr. 724, 21. VII. 1966«. — Paratypus: Chovd aimak: 10 km SSW von Somon Bulgan, 1200 m, 4.—6. VII. 1966 (Nr. 632), 1 ♀, mit Hilfe der »Malaise-Falle« gefangen.

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## A STUDY OF THE HIGHER TAXA OF THE LABIDURIDAE (DERMAPTERA)

By

H. STEINMANN

(Received 19 April, 1977)

The subfamilial and generic classification, by a standard grouping of the characteristics of external morphology and the genital apparatus, of the family Labiduridae VERHOEFF, 1902, for an identification key suitable for elaborating world material.

The species of the ordo Dermaptera whose neck is not of the so-called blattoid-type, that is, in which the postero-ventral sclerite observable anterior to the prothoracic sternum is large, and the posterior margin of the sclerite is widely coupled with the prosternum, while the antero-ventral sclerite meets the postero-ventral plate, are called Mesodermaptera, or moderately ancient species. They are closely related to the Protodermaptera of the blattoid-type, because there are two genital lobes in the male copulatory apparatus, yet they are sharply delimitable from the latter by the more or less well-developed and invariably discernible basal vesicle of the virgae decurrent in the genital lobes of the labidurid species.

At the turn of the century, VERHOEFF and ZACHER have also distinguished the two groups by a consideration of the external morphological features, namely by having found a significant morphological difference on the metatarsus, while later, acting also on morphological characters, they have separated from the family, and also gave family rank to, the species of the Psalidae (now Carcinophoridae) and the Apachyidae.

The study on the basis of the external morphological characters of the species constituting the order was given a wholly new course by the exploration of the genital apparatus (BURR, 1915—1916), and the subsequent classificatory adaptation of the macroscopic anatomical data. By this means, the family is now easily surveyable and it can be stated that, in essence, the species of the family can be relegated to three alliances: the *Allotethus*, *Nala* and *Labidura* groups. These alliances constitute the subfamilies proper. It is extremely interesting that in the three groups the basal vesicle of the virga displays two kinds of development: appearing as a basal incassation in the species of *Gonolabidura*, *Allotethus* and *Allotethella*, and as an extremely sharp swelling in the species of *Nala*, *Labidura* and *Forcipula*. The abnormal genital armature of *Tomopygia*, belonging in the subfamily Labidurinae is unknown. The sub-



families Nalinae and Labidurinae are accordingly distinguished herein by the presence or absence of the longitudinal ridge along the lateral margin of the elytra, a characteristic of subfamilial value in every family of the order.

### Identification key to subfamilies and genera

- 1 (6) Mesosternum very narrow: its anterior portion normal, then constricting towards metasternum and narrowing to about one-half of its width measured at its anterior section. Cerci short, about as long as width of tergite 10 (Figs. 1 and 5), or moderately elongated (Fig. 3). Male paramere elongated, medially cleft; external parameres relatively wide (Fig. 1) or narrower (Figs. 4 and 6). Basal vesicle of genital lobes appearing as a gradually widening swelling, not sharply outlined. Oriental species. — Type-genus: *Allostethus* VERHOEFF, 1904

#### ALLOSTETHINAE VERHOEFF, 1904

- 2 (3) Elytra and wings absent. Pronotum square, as long as wide. Male cerci (Fig. 1) strongly arcuate, gradually attenuating apicad. Antennal joint 3 wide, about twice longer than wide. Basal vesicle of male virga more strikingly swollen (Fig. 2). — Type-species: *Gonolabidura volzi* ZACHER, 1910. — Species: *astruci* BURR, 1911 (South India), *boschmai* BOESEMAN, 1954 (Celebes), *javana* BOESEMAN, 1954 (Java), *minor* BURR, 1914 (South India), *nathani* BRINDLE, 1965 (South India), *piligera* (BORMANS, 1900) (= *volzi* ZACHER, 1910) (Sumatra) ***Gonolabidura* ZACHER, 1910**
- 3 (2) Elytra and wings developed. Pronotum not square, but slightly transversally elongated, wider than long. Antennal joint 3 shortened, less than twice as long as wide. Basal vesicle of male virga not strikingly swollen.
- 4 (5) Pronotum only slightly wider than long. Antennal joint 3 very short, about as long as wide. Larger species: 25–30 mm long. Male cerci moderately elongated, basally not strikingly widened (Fig. 3). Male virga peculiar, comparatively narrow, that is, lateral margins parallel for a considerable section. — Type-species: *Allostethus setiger* VERHOEFF, 1904. — Species: *anamalayanus* KAPOOR, 1968 (India), *burri* BRINDLE, 1965 (Malaya), *celebense* BURR, 1911 (Celebes, Philippines), *gracilis* BRINDLE, 1967 (Philippines), *indicus* (BURMEISTER, 1838) (Malaya, Indonesia, Philippines), *lombokianus* VERHOEFF, 1904 (Lombok, Celebes, Molucas), *minor* (BORMANS, 1900) (Sumatra), *philippinensis* BORELLI, 1926 (Mindanao, Philippines), *setiger* VERHOEFF, 1904 (Java, Thailand, Sumatra) ***Allostethus* VERHOEFF, 1904**
- 5 (4) Pronotum considerably wider than long. Antennal joint 3 moderately long, longer than wide, but not twice longer than wide. Medium-sized species, about 12–21 mm long. Male cerci short, basal sections more or less widened (Fig. 5). Virga of male genital apparatus wider (Fig. 6). — Type-species: *Allostethella malayana* ZACHER, 1910. — Species: *doriae* (DUBRONY, 1879) (Borneo), *guttata* (BORMANS, 1900) (Mentawai Islands, Sumatra), *malayana* ZACHER, 1910 (Sumatra), *nitens* ZACHER, 1911 (Indo-Malayan Archipelago, Java), *sumatrana* BRINDLE, 1965 (Sumatra) ***Allostethella* ZACHER, 1910**
- 6 (1) Mesosternum wide, its posterior portion (towards metasternum) not constricted, normal. Cerci not short, but elongated, robust, characteristic: considerably longer than width of tergite 10 (Figs. 7 and 11).
- 7 (8) Lateral margins of elytra with a longitudinal ridge. Apices of male parameres gradually elongated, apices evenly attenuating (Fig. 9). Legs comparatively short: femur of hind leg not longer than pronotum. — Type-genus: *Nala* ZACHER, 1910

#### NALINAE STEINMANN, 1975

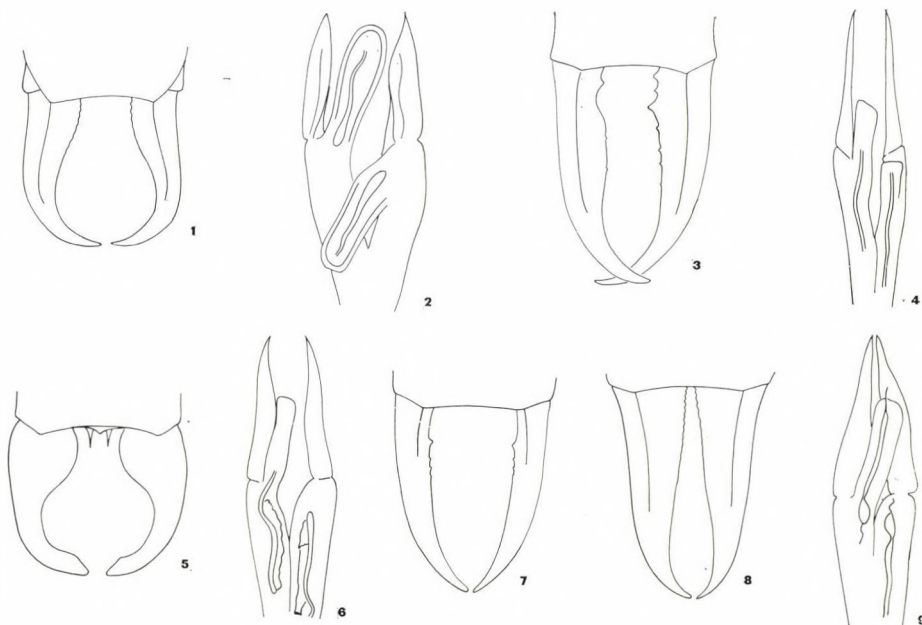
— Comparatively short species, less than 15 mm long. Cerci robust (Figs. 7–8), but significantly shorter than those of the *Labidura*-type, and much thicker than those of the *Forcipula*-type. External parameres of male genitalia relatively short (Fig. 9), their apices not abruptly but gradually attenuating. African, Oriental, and Southern Palearctic species. — Type-species: *Forficula lividipes* DUFOUR, 1829. — Species: *basalis* BEY-BIENKO, 1970 (Afghanistan), *ceprae* MENOZZI, 1929 (Sierra Leone, Guinea),

*figinii* (BURR, 1908) (Guinea, Eritrea, Mozambique), *intermedia* MENOZZI, 1937 (Angola, South Rhodesia), *lividipes* (DUFUR, 1929) (South Europe, Africa, North India, Ceylon, Formosa, Japan, Philippines, Australia), *nepalensis* (BURR, 1907) (India, Nepal, Malaya, Afghanistan), *ornata* BORELLI, 1932 (Borneo), *tenuicornis tenuicornis* (BORMANS, 1900) (Java, Sumatra, New Guinea), *tenuicornis timorensis* BRINDLE, 1971 (Timor) Nala ZACHER, 1910

- 8 (7) Lateral margins of elytra without a longitudinal ridge. Apices of male parameres abruptly acute, thus apex sharply distinct (Figs. 13–14), or apex of parameral plate widely rounded (Fig. 17). Legs comparatively long, femur of hind leg longer than pronotum. African, South American, Oriental and some nearly cosmopolitan species. — Type-genus: *Labidura* LEACH, 1815

#### LABIDURINAE BURR, 1909

- 9 (10) Pronotum quadratic, about as long as wide. Elytra shortened, their posterior margin not covering dorsal shield. Femur of hind leg long, at least thrice longer than pronotum. One species, represented by a male specimen, known from Java (no genital slide made). Male cerci characteristic (Fig. 10). — Type-species: *Cylindrogaster abnormis* BORMANS, 1883 Tomopygia BURR, 1904
- 10 (9) Pronotum longer than wide: more or less widening posteriorad, posterior margin rounded. Elytra well developed, their posterior margins covering dorsal shield, and usually projecting beyond it. Apices of wings also projecting from beyond elytra in most species.
- 11 (12) Male cerci ensiform, robust, evenly arcuate (Fig. 11), medially with a conspicuous large tooth. Female cerci thicker, shorter, wider than those of the *Forcipula* females. Apices of male external parameres widely rounded, and with a characteristic, short projecting tip (Figs. 13–14). No projecting teeth on abdominal sides. — Type-species:



Figs. 1–9. 1 = Male abdominal end and cerci of *Gonolabidura minor* BURR, 1914; 2 = male genital armature of *G. astruci* BURR, 1911; 3 = male abdominal end and cerci of *Allostethus anamalanus* KAPOOR, 1968; 4 = male genital armature of *A. celebensis* BURR, 1911; 5 = male abdominal end and cerci of *Allostethella doriae* (DUBRONY, 1879); 6 = male genital armature of *A. guttata* (BORMANS, 1900); 7–8 = male and female abdominal end and cerci of *Nala intermedia* MENOZZI, 1937; 9 = its male genital armature

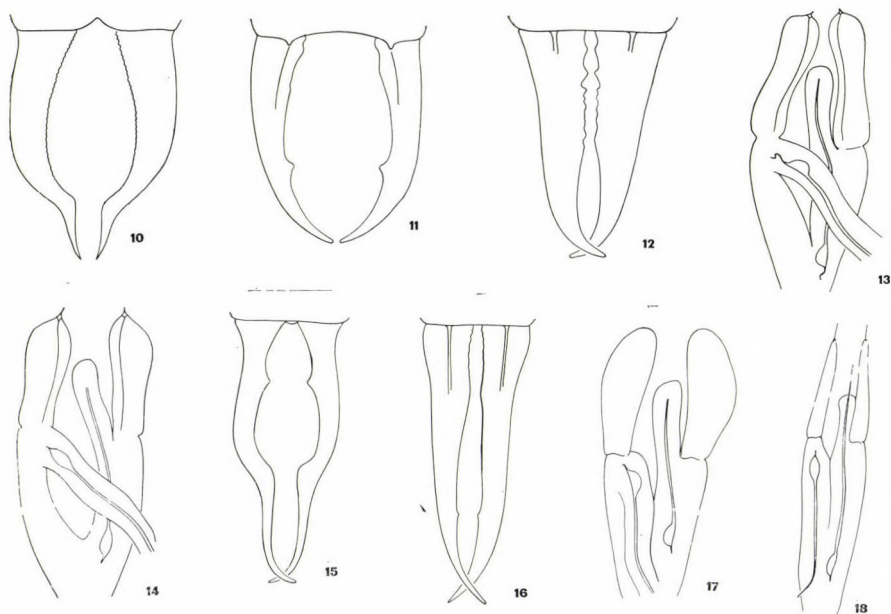


*Forficula riparia* PALLAS, 1773. — Species: *dharchulensis* GANGOLA, 1969 (India), *herculeana* (FABRICIUS, 1798) (St. Helena), *minor* BOESEMAN, 1954 (Sumatra), *riparia* (PALLAS, 1773) (Cosmopolitan), *xanthopus* (STÅL, 1855) (Brasil, Argentina, Bolivia, Surinam)

**Labidura** LEACH, 1815

- 12 (11) Male cerci narrow, elongated, extremely characteristically curved (Fig. 15). Female cerci (Fig. 16) narrower, more elongated, subuliform. Apices of male external parameres widely rounded (Fig. 17), or elongated into a thin and long apex (Fig. 18). Abdominal sides with projecting teeth. — Type-species: *Labidura quadrispinosa* DOHRN, 1863. — Species: *aborensis* BRINDLE, 1966 (India), *americana* BORMANS, 1900 (Bolivia, Peru), *banksi* BORELLI, 1915 (Philippines), *borellii* CHOPARD, 1924 (India, Assam), *clavata* LIU, 1946 (China: Kiangsu), *congo* BURR, 1900 (Congo), *decolyi decolyi* BORMANS, 1900 (India, Bhutan, Sikkim, Viet-Nam), *dacolyi novaguinea* BRINDLE, 1966 (New Guinea), *despinosa* HEBARD, 1917 (North India), *gariazzi gariazzi* BORELLI, 1899 (West and Central Africa), *gariazzi tanganyikae* HINCKS, 1957 (Tanganyika), *indica* BRINDLE, 1966 (India), *lurida* BOLIVAR, 1897 (India, Ceylon), *quadrispinosa* (DOHRN, 1863) (Mauritius, Reunion, India, Bhutan, Sikkim, Ceylon, Burma, Thailand, Viet-Nam, Cambodja, Java, Philippines), *quelchi quelchi* BURR, 1904 (British Guinea, Surinam), *quelchi boliviana* BRINDLE, 1966 (Bolivia), *simplex* BEY-BIENKO, 1970 (North India), *tarsata* WESTWOOD, 1857 (Philippines), *trispinosa* (DOHRN, 1863) (Iran to Northern India, Bhutan), *vanheurni* (BOESEMAN, 1954) (Java), *walkeri* (KIRBY, 1896) (Hong-Kong), *yunnanea* BEY-BIENKO, 1970 (China: Yunnan)

**Forcipula** BOLIVAR, 1897



Figs. 10–18. 10 = Male abdominal end and cerci of *Tomopygia abnormis* (BORMANS, 1883); 11 = male abdominal end and cerci of *Labidura riparia* PALLAS, 1773, 12 = its female abdominal end and cerci, 13 = male genital armature of *L. xanthopus* (STÅL, 1855); 15–16 = male and female abdominal end and cerci of *Forcipula trispinosa* (DOHRN, 1863); 17 = male genital armature of *F. banksi* BORELLI, 1915; 18 = male genital armature of *F. trispinosa* (DOHRN, 1863)

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## THREE NEW APHID SPECIES (HOMOPTERA: APHIDOIDEA) FROM ARTEMISIA IN HUNGARY

By

H. SZELEGIEWICZ

(Received 25 April, 1977)

Description of three new aphid species (*Absinthaphis hortobagyi* sp. n., *A. panonica* sp. n. and *Macrosiphonella szalaymarzsoi* sp. n.) from Hungary.

### ***Absinthaphis hortobagyi* sp. n. (Fig. 1)**

Apterous viviparous female (7 specimens)

**Morphological characters.** Body broadly oval, 1.04—1.16 mm long. Abdominal dorsum membranous with only the spiracular and inter-segmental plates sclerotized and pigmented, distinctly reticulated. Marginal tubercles with small pigmented rim, present on prothorax and abdominal segments I—VII; on segments I and VII always large and flat with basal diameter 0.028—0.036 mm and 0.030—0.040 mm, respectively; on segments II—VI irregular, distinctly smaller, hemispherical to conical, with basal diameter 0.012—0.020 mm. Dorsal hairs sparse, stiff, blunt, on abdominal tergite III about 0.014—0.017 mm long and 0.7—0.9 times as long as basal diameter of antennal joint III; marginal hairs on segment I about 0.009—0.016 mm long and only 0.26—0.50 as long as basal width of marginal tubercle on that segment. Abdominal tergite VIII with 5—6 hairs, of which spinal ones 0.018—0.026 mm long. Ventral hairs acuminate and longer than dorsal ones. Head with straight or slightly convex frons; eyes with indistinct triommatidion. Frontal hairs obtuse, 0.016—0.021 mm long. Antennae 5- or 6-jointed, 0.42—0.48 of body length, with 1—2 secondary rhinaria on apical part of joint III and 1 rhinar on joint IV. Processus terminalis very short, only 0.46—0.56 as long as basal part of ultimate antennal joint, bearing only 3 apical hairs. Antennal hairs very short and blunt, all of about the same length, 0.006—0.009 mm long and 0.3—0.45 as long as basal diameter of joint III. Rostrum reaching to hind coxae. Ultimate rostral segment stiletto-shaped, 0.100—0.108 mm long, about 1.1—1.2 as long as hind tarsal segment II and 2—2.8 times as long as its basal width, with 2 long accessory hairs. Siphunculi volcano-shaped, 0.025—0.038 of body length and 0.3—0.5 as long as cauda, at base 1.6—2.3 times as wide as flange. Cauda short, broadly triangular, 0.66—0.83 as long as wide at base, bearing 23—29 short and stout hairs. Genital plate with 2 long



hairs on anterior half and 4—6 at posterior margin. Legs rather short, hind femora and hind tibiae 0.16—0.20 and 0.30—0.38 of body length, respectively. Second segment of hind tarsus 0.086—0.096 mm long. Ventral trochanteral hair about 0.3—0.5 as long as diameter of trochantero-femoral suture. Dorsal hairs on middle part of hind tibiae stiff and blunt, about 0.007—0.012 mm long and distinctly shorter than hairs on opposite side of tibiae. First tarsal segments with 3,3,2 hairs.

**Colour.** In life brownish without waxy excretion. In cleared specimens head, siphunculi, genital plate and spiracular plates dark brown, cauda and intersegmental sclerites brownish. Antennae brown, only basal part of joint III slightly paler. Legs brown to dark brown, middle part of tibiae pale brown to smoky.

Measurements in mm:

No.	Body	Ant.	Flagellar joints				Si-phun.	Cauda	U. r. s.	H. t. II	No. of c. h.
			III	IV	V	VI					
1.	1.12	0.48	0.11	0.07	0.06	0.09+0.04	0.04	0.09	0.10	0.09	27
		0.48	0.11	0.07	0.07	0.09+0.05	0.04				
2.	1.16	0.52	0.11	0.08	0.07	0.08+0.05	0.04	0.10	0.10	0.09	25
		0.50	0.18		0.07	0.10+0.05	?				
3.	1.04	0.49	0.12	0.08	0.08	0.08+0.05	0.04	0.08	0.10	0.08	25
		0.49	0.10	0.08	0.07	0.09+0.05	0.03				
4.	1.16	0.49	0.11	0.08	0.08	0.09+0.05	0.03	0.10	0.10	0.08	25
		0.50	0.12	0.08	0.07	0.10+0.04	?				
5.	1.04	0.48	0.11	0.07	0.07	0.09+0.05	?	0.09	0.10	0.09	23
		0.50	0.10	0.08	0.07	0.09+0.04	?				
6.	1.12	0.48	0.10	0.07	0.07	0.09+0.05	0.03	0.10	0.10	0.09	29
		0.53	0.10	0.07	0.07	0.09+0.04	0.03				
7.	1.08	0.46	0.16		0.08	0.09+0.05	0.03	0.10	0.10	0.08	23
		0.51	0.09	0.07	0.07	0.07+0.03	0.03				

Explanations: U. r. s. = ultimate rostral segment; H. t. II = hind tarsus II; no. of c. h. = number of caudal hairs

**Host plant:** *Artemisia maritima* L., ssp. *monogyna* (W. et K.).

**Bionomy:** Unknown. Collected from terminal shoots of the plant not visited by ants.

**Type-material:** Holotype (apterous viv. female, slide no. 2320/apt. 1): Hungary, Hortobágy: Nagyhegyes, 25. VI. 1964, coll. H. SZELEGIEWICZ; paratypes with the same data, 6 apt. viv. fem. The holotype and part of the paratypes in the Institute of Zoology, Polish Academy of Sciences, Warsaw; the paratypes also in the Hungarian Natural History Museum, Budapest, and in the coll. of J. HOLMAN, Institute of Entomology, Prague.

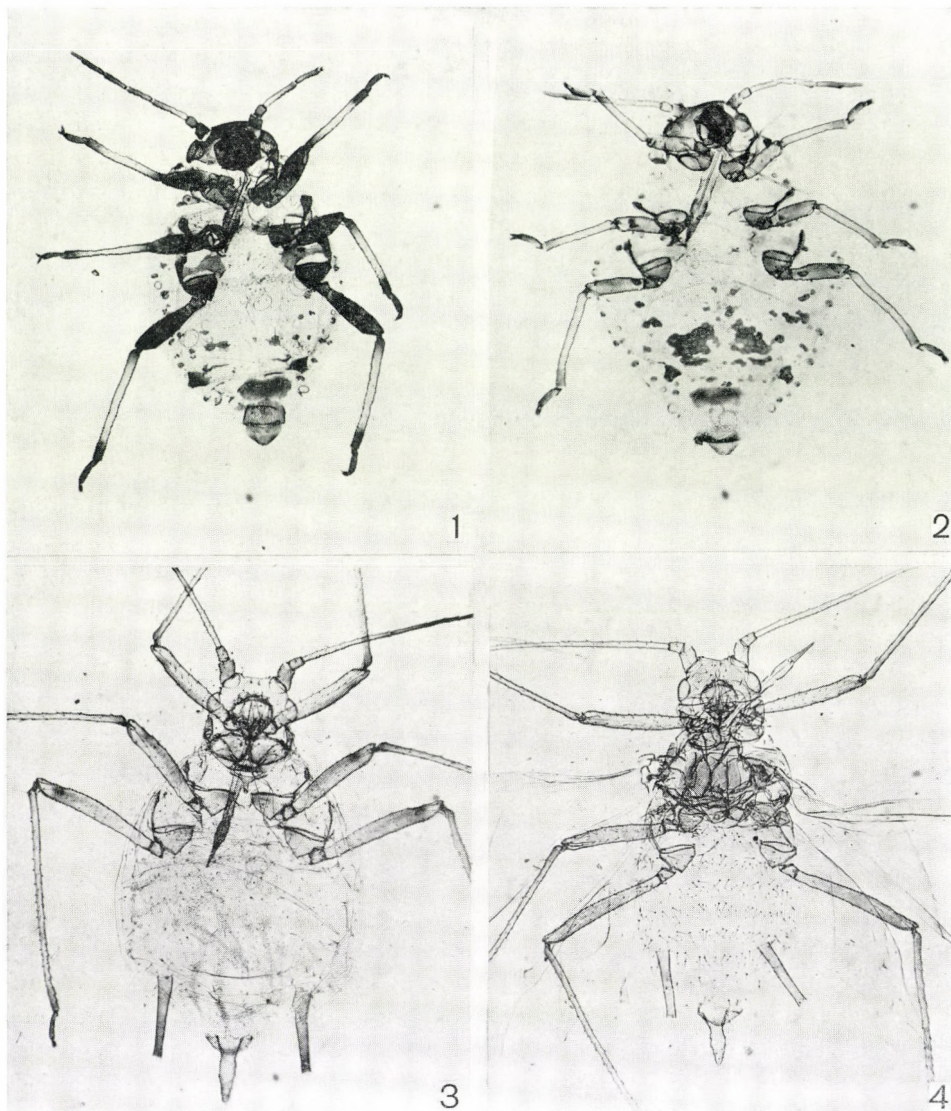
**Taxonomic notes:** The new species belongs to the genus *Absinthaphis* REMAUDIÈRE in STARY et REMAUDIÈRE, 1973, which is characterized

by volcano-shaped siphunculi, stiletto-shaped ultimate rostral segment, a very short processus terminalis and short, broadly triangular and haired cauda. The genus is very little known and contains about 10 species which live mainly of *Artemisia* spp. and are distributed from Western Europe to Korea. In the presence of the marginal tubercles on abdominal segments II—VI the new species resembles the European *A. judenkoi* (SZEL.). The latter species differs in being green in life and in having much longer body hairs and larger marginal tubercles. From the other European species, *A. lambersi* (TASHEV), it differs in having blunt dorsal hairs, marginal tubercles on segments II—VI and in the body colour in life.

***Absinthaphis pannonica* sp. n. (Fig. 2)**  
Apterous viviparous female (4 specimens)

**Morphological characters.** Body 1.37—1.48 mm long. Abdominal dorsum membranous and reticulated with irregular bars across tergites VIII and VII, small, irregular scleroites on tergites VI and rarely V, and the intersegmental sclerites sclerotized and pigmented. Marginal tubercles always with distinct small rims, present on prothorax and abdominal tergites I—VII. Those on tergites I and VII large and mostly flat, with basal diameter 0.036—0.050 mm and 0.032—0.060 mm, respectively; on tergites II—VI distinctly smaller, with basal diameter 0.020—0.032 mm. Dorsal hairs short and blunt, spinal ones on abdominal tergite III about 0.012—0.015 mm long and 0.5—0.7 as long as basal diameter of antennal joint III; marginal hairs on abdominal tergite I about 0.009—0.012 mm long and 0.21—0.25 as long as basal width of marginal tubercle on that segment. VIIIth abdominal tergite with 4—8 blunt hairs of which spinal ones about 0.014—0.020 mm long. Ventral hairs more acute and much longer than dorsal ones. Head with slightly convex frons and no trace of frontal tubercle; eyes with indistinct triommation. Frontal hairs blunt, about as long as abdominal dorsal ones. Antennae 6-jointed, 0.32—0.47 of body length, usually without secondary rhinaria. Processus terminalis 0.7—0.84 as long as basal part of antennal joint VI, bearing 0—1(+3) hairs. Antennal hairs sparse, all of about same length, blunt and stiff, 0.006—0.010 mm long and about 0.35—0.50 as long as basal diameter of joint III. Rostrum reaching to hind coxae. Ultimate rostral segment slender, stiletto-shaped, 0.120—0.140 mm long, about 1.3—1.4 as long as hind tarsal segment II and 2.8—3.3 times as long as its basal width, bearing 2 long accessory hairs. Siphunculi volcano-shaped, 0.029—0.045 of body length and 0.48—0.66 of cauda, at base 1.5—1.9 as wide as flange. Cauda short, broadly triangular, 0.59—0.70 as long as wide at base, with 19—21 short and stout hairs. Genital plate with 1—2 long hairs on anterior half and 3—4 at posterior margin. Legs rather short and stout, hind femora and





Figs. 1—4. 1 = *Absinthaphis hortobagyi* sp. n., apterous viviparous female; 2 = *A. pannonica* sp. n., apterous viviparous female; 3—4 = *Macrosiphonella szalaymarzsoi* sp. n. 3 = apterous viviparous female, 4 = alate viviparous female (Phot. T. PŁODOWSKI)

hind tibiae 0.16—0.20 and 0.27—0.34 of body length, respectively. Second segment of hind tarsus 0.90—0.100 mm long. Ventral trochanteral hair up to 0.3 of diameter of trochantero-femoral suture. Dorsal hairs on hind femora blunt, about 0.008—0.010 mm long; dorsal hairs on middle part of hind tibiae about 0.009—0.010 mm long, distinctly shorter than ventral hairs on opposite side, which are 0.014—0.016 mm long. First tarsal segments with 3,3,2 hairs.

**C o l o u r.** In life brown without waxy excretion, almost shiny. Cleared specimens dark brown on head, siphunculi, cauda and sclerotized areas of abdominal dorsum; antennae pale, only joints II and VI and distal part of joint V brown, joint I dark brown; legs brown, basal part of femora and middle part of tibiae pale.

Measurements in mm:

No.	Body	Ant.	Flagellar joints				Si-phun.	Cauda	U. r. s.	H. t. II	No. of c. h.
			III	IV	V	VI					
1.	1.48	0.52	0.10	0.07	0.04	0.10+0.07	0.04	0.09	0.12	0.09	19
		0.48	0.09	0.08	0.09	0.10+0.08	0.04				
2.	1.37	0.60	0.12	0.08	0.09	0.10+0.08	0.06	0.09	0.13	0.10	17
		0.59	0.12	0.08	0.10	0.10+0.08	0.05				
3.	1.45	0.59	0.13	0.08	0.08	0.10+0.07	0.05	0.09	0.13	0.10	21
		0.58	0.14	0.08	0.10	0.10+0.07	?				
4.	1.40	0.66	0.15	0.09	0.11	0.12+0.08	0.06	0.10	0.14	0.10	21
		0.67	0.15	0.10	0.10	0.11+0.09	0.06				

Explanations as in *Absinthaphis hortobagyi* sp. n.

**H o s t p l a n t:** *Artemisia absinthium* L.

**B i o n o m y:** Unknown. Collected from basal parts of the plant. The aphids were visited by ants.

**T y p e - m a t e r i a l.** Holotype (apterous viv. female, slide no.2907/apt. 1): Hungary, Bakony, Eplény, 1. IX. 1965, coll. H. SZELEGIEWICZ; paratypes (3 apt. viv. fem.) with the same data. The holotype and paratypes in the Institute of Zoology, Polish Academy of Sciences, Warsaw.

**T a x o n o m i c n o t e s:** This species resembles in many respects (brown colour in life, short and blunt hairs, presence of marginal tubercles on abdominal segments II—VI) *A. hortobagyi* sp. n., from which it differs in having a longer processus terminalis, more slender and longer ultimate rostral segment, smaller and fewer marginal tubercles, less distinct reticulation on dorsum, fewer caudal hairs and relatively shorter dorsal hairs.

### Key to the apterae of European species\*

- 1 Antennal joint V with a long hair distinctly longer than other antennal hairs. All dorsal hairs long, about 2 times as long as basal diameter of antennal joint III. Dorsal hairs on middle part of hind tibiae with long, filamentous apices, mostly longer than local diameter of tibiae. Green in life. On terminal parts of *Artemisia campestris* L.  
**A. judenkoi** (SZELEGIEWICZ, 1959)
- All antennal hairs of about the same length; dorsal body hairs short, distinctly shorter or as long as basal diameter of antennal joint III. Dorsal hairs on middle part of hind tibiae never with filamentous apices and always shorter than local diameter of tibiae. . 2

\* The European species of the genus *Absinthaphis* are closely related and very similar in morphology and bionomy. They can be safely distinguished by the following key.



- 2 Marginal tubercles present on abdominal segments I—VII. Hairs on body, antennae and legs mostly blunt and short, marginal hairs on abdominal segment I about half as long as basal diameter of marginal tubercle on that segment, but mostly shorter; spinal hairs on tergite VIII about 0.014—0.024 mm long. Brown in life. . . . . 3
- Marginal tubercles present only on abdominal segments I and VII. Body hairs longer and mostly acute; marginal ones on abdominal segment I about as long as basal diameter of marginal tubercle of that segment; spinal hairs on abdominal tergite VIII about 0.035—0.042 mm long. Green in life. On terminal parts of *Artemisia* sp.
- A. **lambersi** (TASHEV, 1964)
- 3 Processus terminalis very short, at most half as long as basal part of ultimate antennal joint. Ultimate rostral segment about 0.100 mm long and 1.1—1.2 times as long as hind tarsal segment II, and 2—2.8 times as long as wide at base. On terminal parts of *Artemisia maritima* L., not visited by ants
- A. **hortobagyi** sp. n.
- Processus terminalis longer, 0.7—0.8 as long as basal part of antennal joint VI. Ultimate rostral segment more slender and longer, about 0.120—0.140 mm long and 1.3—1.4 times as long as hind tarsal segment II, and 2.8—3.3 times as long as wide at base. On basal parts of *Artemisia absinthium* L., visited by ants
- A. **pannonica** sp. n.

### **Macrosiphoniella szalaymarzsoi** sp. n. (Figs. 3—4)

Apterous viviparous female (8 specimens)

**Morphological characters.** Body 2.3—2.5 mm long. Abdominal dorsum membranous, without any distinct sclerotization. Dorsal hairs stout, distinctly spatulate, 0.076—0.085 mm long and about 2.2—2.7 times as long as basal diameter of antennal joint III; hairs on abdominal tergite VIII not longer than those on anterior tergites. Number of hairs: 15—19 on tergite III, 6—10 (usually 8 or 9) on tergite VI between siphunculi, and 4—6 on tergite VIII. Ventral hairs blunt, not longer than dorsal ones. Head smooth, frontal furrow widely concave; antennal tubercles low, with 3 hairs. Clypeus with 4, mandibular laminae with 2, rarely 3, hairs. Antennae 0.9 to as long as body. Processus terminalis about 2.6—3.1 times as long as base of joint VI, distinctly longer than antennal joint III, with 5—7(+4) short hairs. Antennal hairs slightly spatulate, longest one on joint III up to 1.3 times as long as basal diameter of that joint. Primary rhinaria ciliate. Secondary rhinaria 8—16 in number, scattered on basal 0.5—0.7 part of joint III. Rostrum reaching just beyond hind coxae. Ultimate rostral segment stiletto-shaped, very slender, 0.172—0.192 mm long, about 4.3—5 times as long as its basal width and 1.1—1.3 times as long as hind tarsal segment II, bearing 6 accessory hairs; apical rostrate part beyond apical hairs constituting 0.32—0.37 of total length of ultimate rostral segment. Siphunculi 0.14—0.19 of body length, tapering, without distinct basal constriction, about 0.68—0.92 of length of antennal joint III and 1.18—1.40 times as long as cauda, reticulated on distal 0.5—0.85 part. Cauda elongate, constricted at basal third, bearing 12—15 hairs. Genital plate with 2—4 (usually 2) hairs on disc and 6—9 along posterior margin. Legs normal, hind femora and hind tibiae 0.28—0.31 and 0.52—0.55 of body length, respectively. Hind tarsal segment II 0.172—0.180 mm long. Ventral trochanteral hair finely pointed, 0.8—1.2 times as long as diameter of trochantero-femoral suture. Hairs on hind femora blunt to slightly spatulate, 1.3—1.8

times as long as basal diameter of antennal joint III. First tarsal segment with 3,3,3 hairs; lateral ones very thick.

**Colour.** In life green, covered with a fine grey waxy excretion. In cleared specimens body almost colourless; head darker than body, with only antennal tubercles slightly darker, yet much paler than first antennal joint. Antennae brown to blackish, except for a larger part of joint III and sometimes basal part of joint IV, which are paler to colourless. Fore and middle femora brown with basal and whole ventral parts dusky to colourless: hind femora with basal 0.3—0.5 and apices pale, remainder brown to dark brown. Fore and middle tibiae brownish with dark brown + blackish apices; hind tibiae pale, with darker basal and apical parts; tarsi dark brown to black. Siphunculi brown with dark brown apices, often pale in basal part. Cauda concolorous with basal part of siphunculi. Genital plate nearly colourless or with two lateral dusky spots on anterior half.

Measurements in mm:

No.	Body	Ant.	Flagellar joints				Siphun.	Cauda	U. r. s.	H. t. II	No. of c. h.
			III	IV	V	VI					
1.	2.41	2.20	0.54	0.40	0.32	0.20+0.58	0.45	0.38	0.18	0.15	14
		2.15	0.52	0.42	0.32	0.18+0.57	0.46			0.15	
2.	2.39	2.28	0.50	0.38	0.32	0.18+0.54	0.45	0.38	0.17	0.14	12
		2.20	0.50	0.37	0.32	0.18+0.50	0.46			0.15	
3.	2.34	2.34	0.54	0.38	0.31	0.19+0.56	0.45	0.32	0.18	0.14	15
		2.15	0.53	0.37	0.33	0.18+0.56	0.44			0.15	
4.	2.34	?	0.54	0.39	0.34	0.17+?	0.40	0.32	0.18	0.13	13
		?	0.50	0.36	0.32	0.18+?	0.42			0.15	
5.	2.51	2.23	0.56	0.42	0.34	0.17+0.56	0.40	0.30	0.17	0.15	14
		2.38	0.58	0.42	0.35	0.18+0.60	0.37			0.14	

Explanations as in *Absinthaphis hortobagyi* sp. n.

#### Alate viviparous female (one specimen)

**Morphological characters.** Dorsum as in apterous female, but with indistinct, pigmented marginal sclerites on anterior segments of abdomen. Dorsal hairs slightly spatulate, about 0.075—0.085 mm long. Antennae up to a little longer than body. Processus terminalis 3.3—3.6 times as long as base of antennal joint VI and as long as, to slightly longer than, antennal joint III. Antennal hairs on joint III maximally up to 0.036 mm, about 1.2 times as long as basal diameter of that joint. Secondary rhinaria 30—32, scattered over whole length of joint III. Wing venation normal, pterostigma with some hairs along its posterior margin. Siphunculi 0.65—0.68 of antennal joint III. Cauda with 10 hairs. Other characters as in the apterous viviparous female.



Measurements of the single specimen in mm: Body 2.26, antennae 2.37 (2.13), siphunculi 0.40 (0.37), cauda 0.29, ultimate segment of rostrum 0.17, hind tarsal segment II 0.15, fore wing 2.85, hind wing 1.71.

**Host plant:** *Artemisia alba* TURRA, ssp. *saxatilis* (W. et K.).

**Bionomy:** Presumably holocyclical and monoecious, as the other species of the genus. Collected from terminal shoots of the plant.

**Type-material:** Holotype (apterous viv. female, slide no. 2248/apt. 1), Hungary, Tihany, 17. V. 1961, coll. L. SZALAY-MARZSÓ; paratypes (7 apt. and 1 al. viv. fem.) with the same data. The holotype and part of the paratypes in the Institute of Zoology, Polish Academy of Sciences, Warsaw, the paratypes also in the Hungarian National History Museum, Budapest, and in the coll. of D. HILLE RIS LAMBERS, Bennekom, Netherlands.

The species is dedicated to its collector, DR. L. SZALAY—MARZSÓ.

**Taxonomic notes:** *Macrosiphoniella szalaymarzsoi* sp. n. resembles the European species *M. abrotani* (WALK.) and *M. pulvera* (WALK.), but differs in having a longer ultimate rostral segment, relatively longer siphunculi, differently pigmented legs and in other minor characters.

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## FOUR NEW EULOPHID WASPS FROM HUNGARY (HYMENOPTERA: CHALCIDOIDEA)

By

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The author describes four new Chalcid flies of the family Eulophidae collected in the nature conservation area Hortobágy.

Three years of large-scale collecting in the nature conservation area Hortobágy yielded, among other insects, a considerable amount of Chalcid flies. The bulk of this material is represented by three families: Eulophidae, Eurytomidae, and Pteromalidae. Making at first the identification of Eulophidae, I found some undescribed species belonging to the genera *Diglyphus* WALKER, 1848, *Entedon* DALMAN, 1820, and *Omphale* HALIDAY, 1833, as also a fourth one, the second species of the interesting genus *Eugerium* GRAHAM, 1959.

### *Diglyphus propodealis* sp. n. (Figs. 1—2)

Female. — Bright green, malar space and pronotum with a slight coppery luster, hind margin of gastral tergites narrowly purplish, legs green, knees and tip of tibiae yellow, tarsi infuscated; wings hyaline.

Head with sunken face, but obviously somewhat broader than thorax, finely alutaceous, tolerably shining, malar space distinctly longer than oral fossa (11 : 8), eye about twice as long as malar space, bare; toruli below lower eye margin, scape about as long as the two following joints combined, slightly compressed, pedicel a little shorter than funicle 1, twice as long as wide, funicles 1 and 2 one and a half times as long as wide, funicle 2 a little shorter than preceding joint, club nearly as long as funicle (13 : 12).

Thorax almost twice as long as wide (55 : 30), length of pronotum : meso-scutum : scutellum as 12 : 20 : 15. Postnotum hardly as long as a fourth of scutellum; thoracic dorsum reticulated: pronotum somewhat blurredly, meso-scutum more sharply, scutellum much finely and more densely, postnotum almost smooth; propodeum densely reticulated but tolerably shining, fine median carina present. Wings (length: breadth as 110 : 40) hyaline, densely hairy, speculum poorly developed, enclosing a few scattered hairs, relation of costal cell : marginalis : stigmalis as 35 : 38 : 7, postmarginalis about twice the length of stig-



malis, longest marginal fringes half as long as stigmal vein, cubital vein strongly bending at base, reaching there short basal vein, basal cell closed below by subcubital line of hairs. Legs normal, slender, basitarsus on all legs slightly but distinctly shorter than following tarsal joint.

Gaster shorter than thorax (48 : 55), tolerably stout, about twice as long as broad, finely alutaceous dorsally. Length 1.5 mm.

Male. — Differs from the female mainly by the form of wings, which are narrower ( $80 \times 35 = 2.2 : 1$ , in the female  $2.7 : 1$ ), the speculum more blurred by scattered hairs, antennae more slender, funicle 1 and 2 twice as long as wide, club longer than funicle (13 : 10). Length: 1.2 mm.

Holotype (female) (Hym. Typ. nr. 6006), allotype (male) (Hym. Typ. nr. 6009) and paratype (female) (Hym. Typ. nr. 6010): Hungary: Nagyiván, 5—6. V. 1975, taken by netting by the author in a plant community of *Agrosti*—*Eleochari*—*Alopecuretum*.

Differs from the known species by the proportion of marginalis : stigmalis being 5.4 : 1 (in the two nearest species *isaea* WALKER, 1839, and *minoeus* WALKER, 1839, 3.3—3.7 : 1 and 2.2—2.9 : 1, respectively) and by the densely reticulate propodeum.

#### ***Eugerium orbatum* sp. n. (Figs. 3—4)**

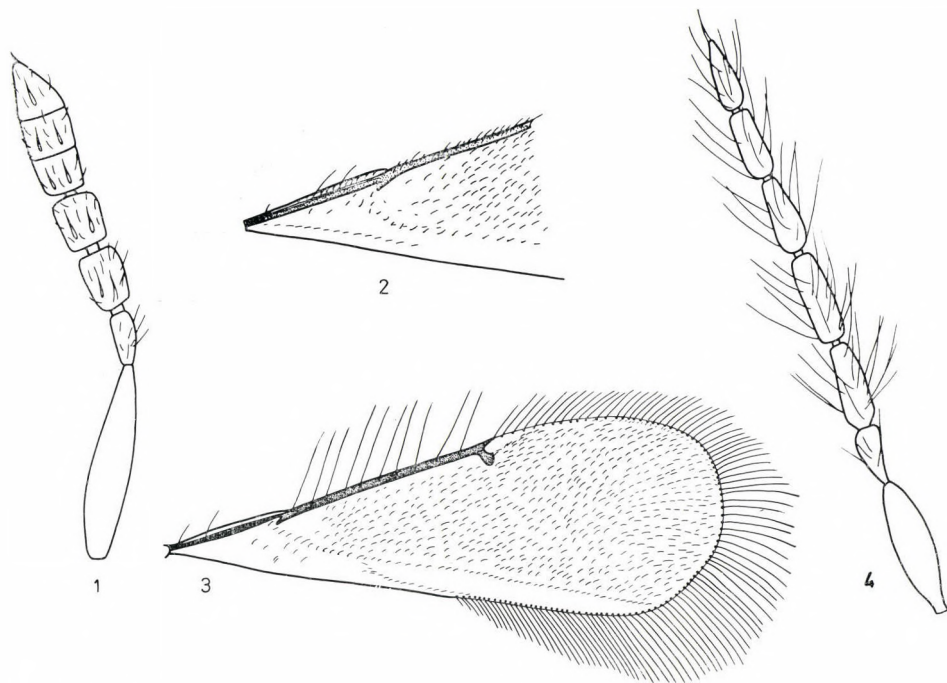
Male. — General colour dark brown with distinct coppery luster, lateral lobes of mesoscutum and scutellum bright bluish green, antennae with legs, also tarsal joints black, only femora with slight greenish sheen; wings almost hyaline.

Head although with a sunken face obviously somewhat broader than thorax, almost smooth, tolerably shining, only very blurredly reticulated, malar space about half as long as eye, at least twice or thrice as long as oral fossa. Antennae a little below lower eye margin, funicle without ring joint, having five separated joints without club, scape slightly compressed, about as long as pedicel and funicle 1 together, latter about twice as long as pedicel, following joints 3—4 times as long as wide, covered with long stiff hairs almost as long as respective joint, last joint a little shorter than preceding joint, ending in a long bristle.

Thorax about thrice as long as wide, thoracic dorsum tolerably shining, almost smooth, yet somewhat shrivelled, suture between pronotum and mesoscutum as well as between mesoscutum and scutellum not distinctly visible, latter more strongly shining, convex, smooth; propodeum likewise shrivelled, details not visible. Wings with long marginal fringes and dense discal ciliation characteristic of the genus, speculum poorly developed, closed below by cubital vein beginning almost at subcostal vein and nearly substituting the hardly developed basal vein running distad and reaching almost distal border of

wing, bifurcating at about proximal third, continuing in two arms, lower one flanking hind margin of wing and leaving a narrow, bare stripe between the two arms; subcostal cell scarcely hairy, relation of costal cell : marginalis : stigmalis as 15 : 24 : 3, postmarginalis as long as stigmalis. Legs slender, normal, basitarsus and second tarsal joint subequal.

Gaster shorter and narrower than thorax, tolerably shining dorsally, only very blurredly alutaceous. Length 0.9 mm. Female not seen.



Figs. 1—4. 1—2. *Diglyphus propodealis* sp. n. ♀. 1 = antenna; 2 = basal portion of fore wing. 3—4. *Eugerium orbatum* sp. n. ♂. 3 = fore wing; 4 = antenna

Holotype (male) (Hym. Typ. nr. 6011) and four male paratypes (Hym. Typ. nr. 6012—6015): Hungary: Nagyiván, taken on 5—6 May, 1975, by the author, in a plant community of *Eleochari—Alopecuretum*.

Differs from *E. isander* WALKER, 1839, the single known species of the genus, by the colour of antennae and legs and mainly by the proportion of costal cell : marginalis and marginalis : stigmalis, 1 : 1.4—1.6 and 7—8 : 1, respectively. (In *E. isander* WALK., 1 : 1.1—1.2 and 3.4—3.6 : 1, respectively.) Differs also by the form of cubital vein.



**Entedon tibialis** sp. n. (Fig. 5)

Female. — Dark blue, propodeum and first tergite of gaster green, rest of gaster coppery, tibiae white, fore tibiae blue with two whitish stripes, fore tarsi blackened, mid and hind ones (except last joint) white. Antennae green, wings hyaline.

Head broader than thorax (73 : 60), thrice as broad as long when seen from above (73 : 24), broader than high (73 : 52) in frontal aspect, densely and sharply reticulated, vertex likewise reticulated yet meshes smaller, hind margin behind ocelli sharply margined, hind ocelli almost touching hind margin of vertex, as far from inner orbits as their diameter; the two arms of antennal groove present and almost reaching compound eyes, latter ones as far from each other as their length (35 : 35); oral fossa about twice of malar space (25 : 12), clypeus not prolonged, anterior margin not reflexed; toruli nearly level with lower eye margin, scape but a little shorter than eye (30 : 35), pedicel almost thrice as long as wide, funicle slender, hardly broader than pedicel, funicle 1 four times, funicle 3 still 2.5 times as long as wide, club slender, a little shorter and broader than two preceding joints.

Thorax 1.5 times as long as broad (95 : 60), mesoscutum and scutellum sharply reticulated, poorly shining, scutellum as long as mesoscutum (40 : 40), longer than wide (40 : 33), propodeum strongly shining, but densely and finely reticulated medially. Legs normal, basitarsus on mid and hind legs almost subequal to following joint. Petiole short, transverse. Wings hyaline, proportion of costal cell : marginalis : stigmalis as 50 : 50 : 5, no basal vein, basal cell bare, closed below only by a short rest of subcubital lines of hairs; marginal fringes short.

Gaster almost thrice as long as wide (130 : 55), on the dry specimen strongly concave above, a little longer than head and thorax combined, strongly shining, pointed at apex, tergite 6 as long as wide at base, finely alutaceous. Length 3.2 mm. Male unknown.

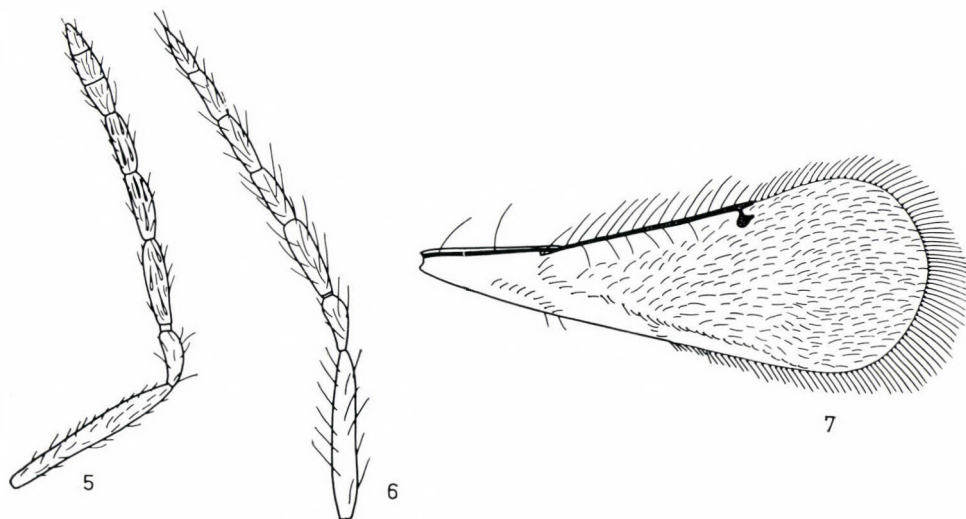
Holotype (Hym. Typ. nr. 6016): Hungary, Újszentmargita, taken in a *Galatello-Quercetum roboris* forest, on 21–23. May, 1975, by DR. Z. KASZAB.

Nearest to *Entedon leucocnemis* ERDŐS, 1944, but differs by the more slender antennae and the slender, distally sharply pointed gaster.

**Omphale brevibuccata** sp. n. (Figs. 6–7)

Female. — Head green, face coppery, antennae brown, scape yellow, thoracic dorsum brown, almost without metallic luster, scutellum, propodeum, sides of thorax and ventrally yellowish, petiole and legs with all coxae yellow, gaster brown, dorsally with slight coppery luster. Wings hyaline.

Head from above about 1.5 times as wide as long (45 : 25), frontally a little wider than high (45 : 35), vertex very finely, almost engravedly reticulated, strongly shining, sharp hind margin almost angularly excavated in middle; hind ocelli appressed to hind margin of vertex, thrice as far from inner orbits as their diameter; face as densely as yet more sharply reticulated than vertex, only poorly shining, antennal groove with a narrow, parallel-sided elevation as long as two-thirds of scape, terminally with two finely engraved



Figs. 5—7. 5. *Entedon tibialis* sp. n. ♀, antenna. 6—7. *Omphale brevibuccata* sp. n. ♀. 6 = antenna, 7 = fore wing

arms, not reaching inner orbits; clypeus transversely convex, anterior margin slightly raised and reflexed, oral fossa seven times the malar space (23 : 2); toruli above lower eye margin, antennae slender, scape almost as long as eye (23 : 27), pedicel twice as long as wide, funicle attenuating toward tip, with five distinctly separated joints, each joint much longer than wide, first one four times, fourth joint thrice as long as wide, fifth joint strongly narrowing toward tip.

Thorax tolerably stout, 1.5 times as long as broad (45 : 35), mesoscutum shorter than scutellum (15 : 22), thoracic dorsum tolerably shining, very finely (almost engravedly) reticulated, hind portion of mesoscutum and scutellum finely lineolated; propodeum almost smooth, as long as petiole; wings almost thrice as long as wide (135 : 53), as long as entire body, densely hairy, speculum nearly wanting, costal cell very narrow, proportion of costal cell : marginalis : stigmalis as 40 : 55 : 5; radial cell not developed and not indicated by a row of hairs; longest marginal fringes about twice as long as stigmalis, subcostal cell bare, basal and cubital vein indicated by a row of hairs; legs very



slender, basitarsus on mid and hind legs almost subequal to following tarsal joint.

Gaster longer than head and thorax combined (75 : 65), finely alutaceous above, petiole as long as wide, ovipositor as long as hind basitarsus. Length 1.8 mm. Male unknown.

Holotype (Female) (Hym. Typ. nr. 6017): Hungary, Újszentmargita, taken by sweeping on the undergrowth of a *Galatello-Quercetum roboris* forest, between 17–19 h on 15 June, 1976 (leg. J. PAPP).

As *Omphale matrana* ERDŐS, 1954, yet differing by the more densely hairy wings, the absence of a radial cell, also funicle 1 being longer than pedicel, funicle joints much longer, malar space much shorter (in *O. matrana*: 17 : 7), marginal fringes longer (in *O. matrana* only as long as stigmal vein), and also by the relation of costal cell : marginalis : stigmalis (in *O. matrana*: 25 : 25 : 6).

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## EUPITHECINI FROM KOREA AND CHINA (LEPIDOPTERA)\*

By

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Eleven species of the tribe Eupithecini from the collectings by the Hungarian Natural History Museum in Korea are discussed: two are new for science (*Eupithecia koreaica* sp. n. and *E. hundamoi* sp. n.), and nine for the fauna of Korea. Seven species of the "*Eupithecia recens*-group" from the collectings by H. HÖNE in China; six are new for science (*E. repentina* sp. n., *E. vivida* sp. n., *E. irreperita* sp. n., *E. eximia* sp. n., *E. extrinseca* sp. n. and *E. fatigata* sp. n.).

### I. SPECIES FROM KOREA

(Descriptions by A. M. VOJNITS)

During their expeditions in Korea, DR. S. HORVATOVICH, DR. J. PAPP, and DR. A. VOJNITS collected also 41 specimens of Eupithecini species. A great number of the species was new for the fauna of Korea (*Eupithecia homogrammata* DIETZE, *E. diffisata* DIETZE, *E. lunata* DIETZE, *E. invise* DIETZE, *E. mandschurica* STGR., *E. lariciata mesodeicta* PROUT, *E. vulgata* HAW., *Callyclistis consueta* BTLR., *Chloroclystis coronata* HBN.), and two for science (*Eupithecia koreaica* sp. n., *E. hundamoi* sp. n.).

#### 1. *Eupithecia koreaica* sp. n.

**Diagnosis.** Alar expanse of the single known male specimen: 16 mm; of the single female specimen: 17 mm. Wings wide, fore wing an isosceles triangle, costa slightly (apicad rather more), termen medially, dorsum only at tornus, arcuate. Hind wing wide and angular. Basic colour of wings brownish yellow. Along costa of fore wing, near apex some brown spots present. Antemedian blurred. Wide postmedian consisting of two greyish stripes, describing one convex curve. Discal spot blurred. Hind wing almost without pattern. Underside of wings pale brownish yellow, shiny, pattern well defined. Cilia short, brown straited with yellow, shiny.

**Genitalia.** ♂: Valvae almost an isosceles triangle. Costa convexly arcuate, dorsum angular. Uncus medium long and wide, bicuspidate. Vinculum wide, rounded. Aedoeagus cylindrical, expanded with an irregularly shaped

\* Zoological Collectings by the Hungarian Natural History Museum in Korea, Nr. 35 — Studies on Palaearctic Eupithecia Species VIII.



and a spiniform sclerotized cornutus. Sternite VIII elongate, basally concave and bilaterally angular, rearwards narrow, at end with two ear-shaped lobes (Fig. 1). ♀: Corpus bursae piriform, its anterior three-fifths padded with minute chitinous spines, median and posterior parts with large or medium-sized ones. Anterior apophyses short and thin, posterior apophyses medium and thin. Papillae anales small, rounded (Fig. 2).



Fig. 1. Male genitalia, aedoeagus separated and sternite VIII, of *Eupithecia koreaica* sp. n.

**Biology.** First stages and foodplant unknown. One generation: flight period in the second half of July.

**Distribution.** Ranging in Korea. Locus typicus: Hyesan, Prov. Ryang-gang.

**Specific differences.** The new species resembles, in external morphology *Eupithecia thalictрата* PÜNGELER, 1902, but the differences of the genitalia are constant. *Eupithecia koreaica* sp. n. is characterized by the aedoeagus with two sclerotized cornuti (*thalictрата*: 5—6 cornuti), the basally bilaterally angular sternite VIII with two ear-shaped lobes (*thalictрата*: sternite VIII basally rounded and without "ears") and the piriform corpus bursae (*thalictрата*: round as a ball). These features unambiguously and satisfactorily delimit the new species from *Eupithecia thalictрата* PÜNG.

**Holotype** ♂: "Korea, Prov. Ryang-gang Hyesan, room of Hotel Hyesan" "No. 294. 26 July 1975, leg. J. PAPP et A. VOJNITS" "Gen. prep. No. 10.823 ♂, DR. A. VOJNITS, Budapest

TTM". Paratype ♀: "Korea, Prov. Ryang-gang Hyesan, room of Hotel Hyesan" "No. 294. 26 July 1975, leg. J. PAPP et A. VOJNITS" "Gen. prep. No. 10.824 ♀, DR. A. VOJNITS Budapest TTM". Holotype and paratype deposited in the Hungarian Natural History Museum, Budapest.

## 2. *Eupithecia hundamoi* sp. n.

**Diagnosis.** Alar expanse of the single known female specimen: 23 mm. Wings a little narrow; fore wing extended, costa slightly (apicad and basally more), termen markedly, dorsum a little, arcuate. Termen longer than dorsum. Hind wing short. Basic colour of wings yellowish brown. Antemedian and postmedian on the fore wing wide, yellowish. Between ante- and post-medians a wide yellowish band present. Discal spot extended, marked, brown. Along costa of fore wing, medially two brown spots. On hind wing more yellowish bands. Discal spot little but markedly extended and brown. Underside of wings pale brownish yellow, pattern well defined. Cilia short, yellow, shiny.

**Genitalia.** ♀: Corpus bursae rounded, padded with minute chitinous spines; medially 8—10 very big spines on chitinous lamella. Anterior apophyses very short and thin, posterior apophyses medium and thin. Papillae anales medium (Fig. 3). ♂: unknown.

**Biology.** First stages and foodplant unknown. Flight period: assumably on the wing in the middle of summer: the specimen collected by the end of July was already rather worn.

**Distribution.** Ranging in Korea. Locus typicus: Hyesan, Prov. Ryang-gang.

**Specific differences.** The new species slightly resembles, in external morphology, *Eupithecia veratraria* HERRICH-SCHÄFFER, 1843—1856, but its wings are narrower, the discal spots more extended and the antemedian on fore wing is nearer to termen. Between the female genitalia of the two species there are decisive differences. The corpus bursae of *E. hundamoi* sp. n. is globate (*veratraria*: elongated) and the big, marked citinous spines are very characteristic (*veratraria*: the spines are medium or little, and their position differs from that in *E. hundamoi* sp. n.).

Holotype ♀: "Korea, Prov. Ryang-gang Hyesan, room of Hotel Hyesan" "No. 276. 22 July 1975, leg. J. PAPP et A. VOJNITS" "Gen. prep. No. 10.794 ♀, DR. A. VOJNITS Budapest TTM". Holotype deposited in the Hungarian Natural History Museum, Budapest.

I dedicate the new species to Mr. HUN-DA MO; he was our assistant at the time of the third expedition.

## 3. *Eupithecia homogrammata* DIETZE, 1908

D. ent. Z. Iris, **21**: 191—192, Pl. 2, Figs. 1, 2.

The species, described from the Amur and Ussuri region, occurs, according to some authors, also in the Sachalin Island. New for the fauna of Korea.

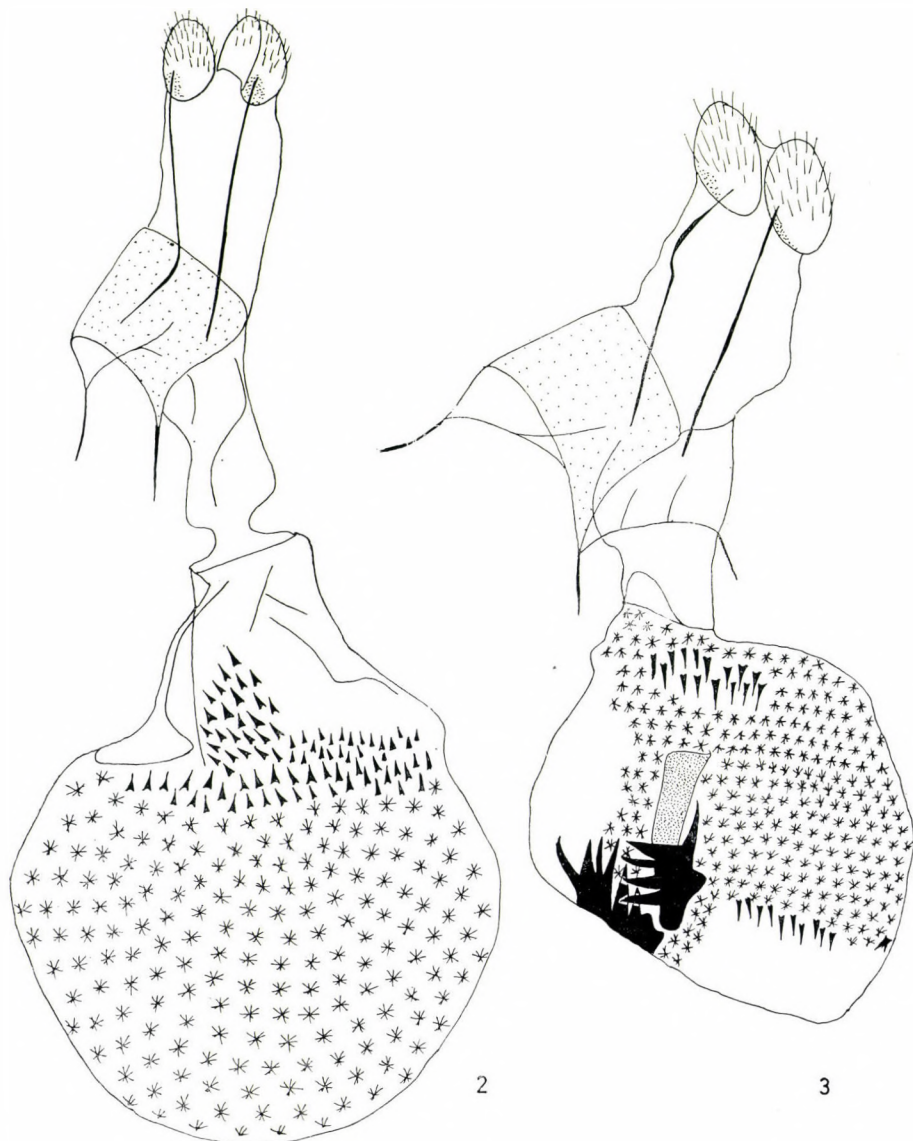
The specimens from the Amur—Ussuri region were collected in July; the flight period of all the specimens — except one — was August in Korea.



I give the illustrations of the male and female genitalia and of sternite VIII of the male in Figs. 4 and 6.

Examined material. Prov. Ryang-gang: Hyesan, room of Hotel Hyesan, 22 July 1975 (No. 276), 1 ♀. — Prov. Gang-von, district On-dzong, Kum-gan San, near Hotel Go-song, 250 m, 5 August 1975 (No. 319), 1 ♂, 3 ♀♀; 6 August 1975 (No. 322), 2 ♂♂, 6 ♀♀, leg. J. PAPP et A. VOJNITS.

Slides: Nos. 10.807, 10.811, 10.815 (♂♂); 10.806, 10.808, 10.809, 10.810, 10.812, 10.813, 10.814, 10.816, 10.817 (♀♀), gen. prep. A. VOJNITS.



Figs. 2—3. 2 = Female genitalia of *Eupithecia koreica* sp. n.; 3 = Female genitalia of *Eupithecia hundamoi* sp. n.

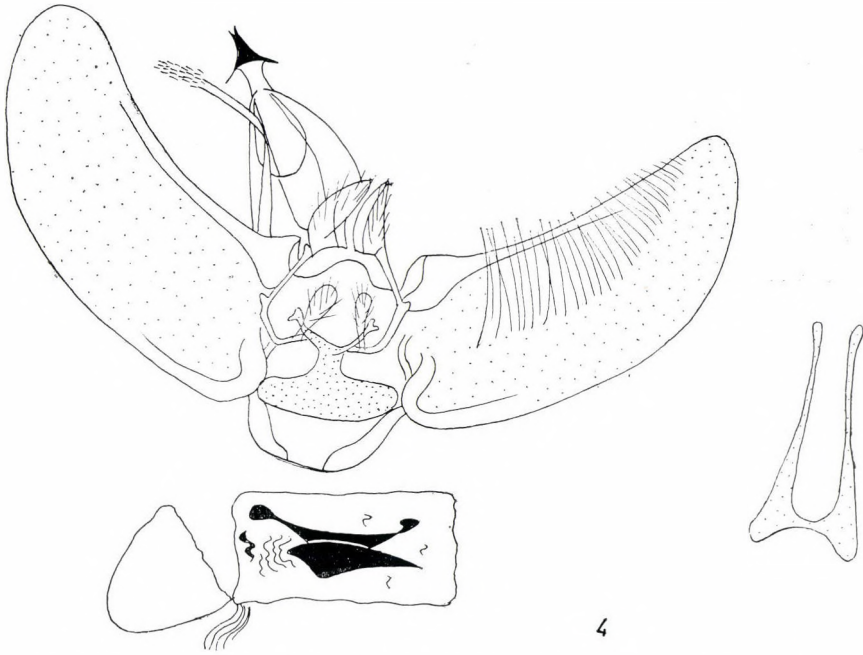


Fig. 4. Male genitalia, aedeagus separated and sternite VIII, of *Eupithecia homogrammata* DIETZE

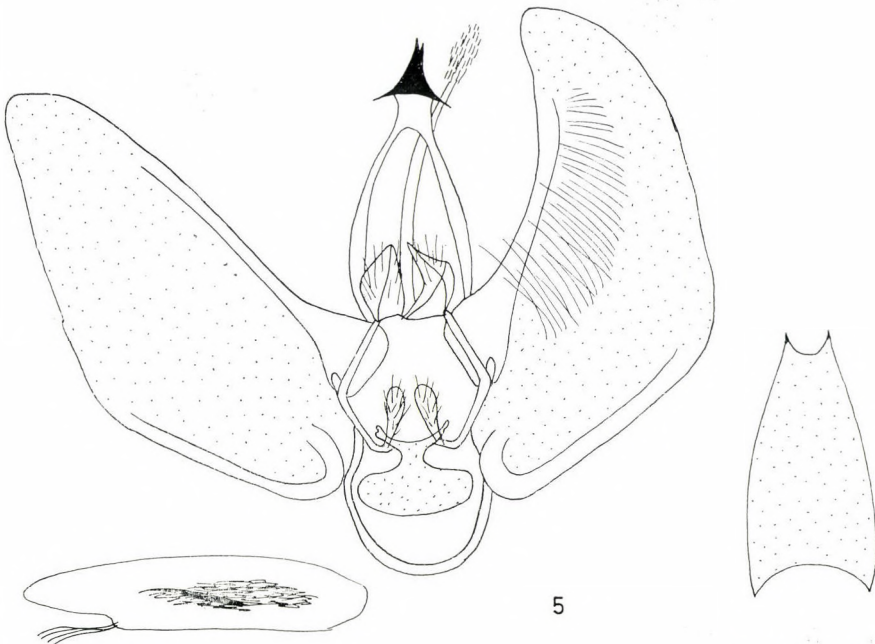


Fig. 5. Male genitalia, aedeagus separated and sternite VIII of *Eupithecia diffisata* DIETZE



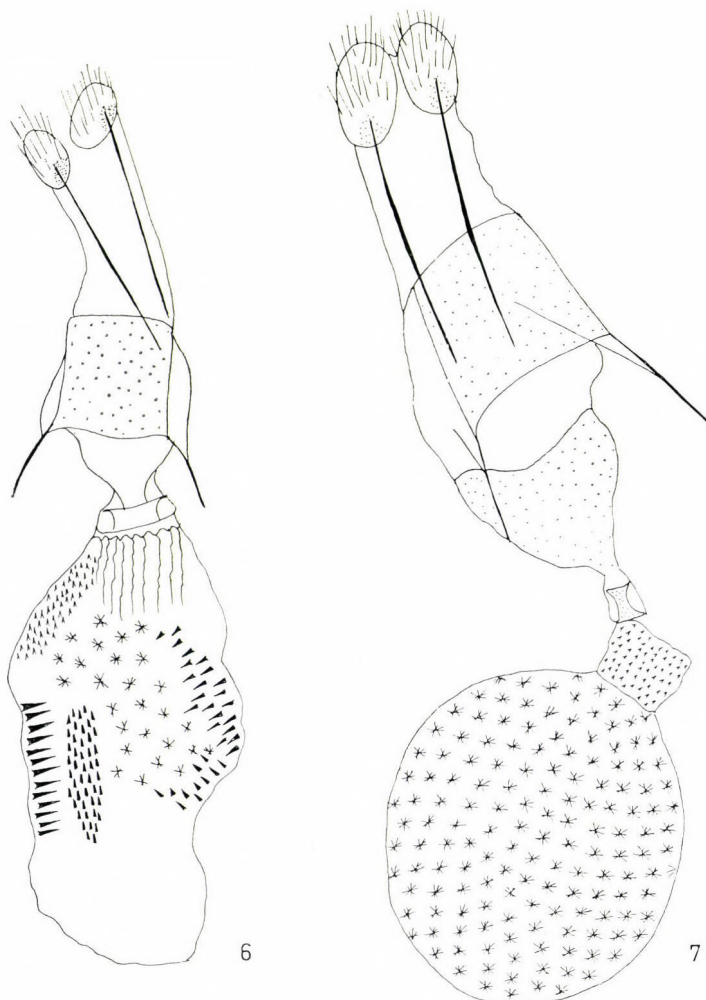
4. *Eupithecia diffisata* DIETZE, 1903

D. ent. Z. Iris, 16: 343, Pl. 3, Figs. 15, 16.

The species, described from the Ili district, occurs, according to PÜNGELER (DIETZE, 1913), also in the Transcaucasus region. New for the fauna of Korea.

I give the illustrations of the male and female genitalia and of sternite VIII of the male in Figs. 5 and 7. The drawing of the male genitalia was made from the holotype of the species (deposited in the Humboldt Museum, Berlin); its label: "*Eupithecia diffidata aequata* DIETZE Holotype" "10.246, A. VOJNITS".

Examined material. Prov. Ryang-gang: Plateau Chann-Pay, Sam-zi-yan, 1600 m, 28 August 1971 (No. 219), 1 ♀, leg. S. HORVATOVICH et J. PAPP.



Figs. 6—7. 6 = Female genitalia of *Eupithecia homogrammata* DIETZE; 7 = Female genitalia of *Eupithecia diffisata* DIETZE

5. *Eupithecia lunata* DIETZE, 1913

Biologie d. Eupithecién, p. 88, Fig. 190.

The species, described from the Juldus Mountains (Ili district), is new for the fauna of Korea.

I give the illustrations of the male genitalia and of sternite VIII of DIETZE's holotype (deposited in the Humboldt Museum, Berlin) and of the female genitalia in Figs. 8 and 9.

Examined material. Prov. Gan-von: district On-dzong, Kum-gang san, near Hotel Go-sang, 250 m, 6 August 1975 (No. 322), 1 ♀, leg. J. PAPP et A. VOJNITS.

Slide: No. 10.976 (♀), gen. prep. A. VOJNITS.

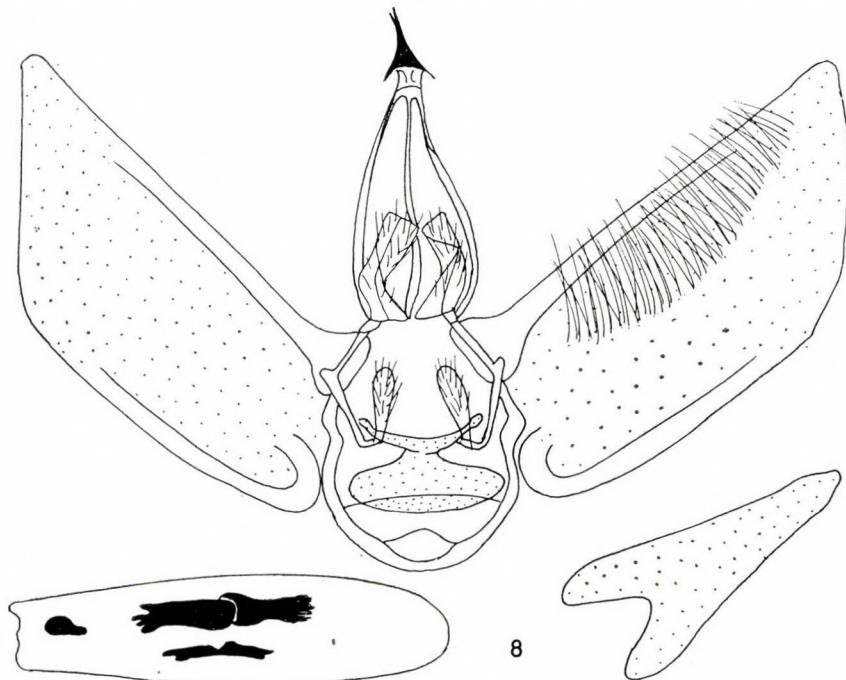


Fig. 8. Male genitalia, aedoeagus separated and sternite VIII, of *Eupithecia lunata* DIETZE

6. *Eupithecia invis*a BUTLER, 1878

Ann. Mag. Nat. Hist., (5) 1: 444.

The species, described from Hokkaido (Japan), is new for the fauna of Korea.

I give the illustration of the hitherto unknown female genitalia in Fig. 10. The corpus bursae of *E. invis*a BTLR. and of *E. mandshurica* STGR. greatly resemble each other.

Examined material. Prov. Ryang-gang: Chann-Pay plateau, Sam-zi-yan 1700 m, 24 July 1975 (No. 288), 1 ♀, leg. J. PAPP et A. VOJNITS.

Slide: No. 10.795 (♀), gen. prep. A. VOJNITS.

7. *Eupithecia mandshurica* STAUDINGER, 1897

D. ent. Z. Iris, 10: 118—119.

The species, described from the Amur region, occurs, according to INOUE (1956), also on Honshu (Japan). New for the fauna of Korea.

I give the illustration of the female genitalia in Fig. 11.

Examined material. Prov. Gan-von: district On-dzong, Kum-gang san, near Hotel Go-song, 250 m, 5 August 1975 (No. 319), 2 ♀♀, leg. J. PAPP et A. VOJNITS.

Slides: Nos. 10.797, 10.798 (♀♀), gen. prep. A. VOJNITS.

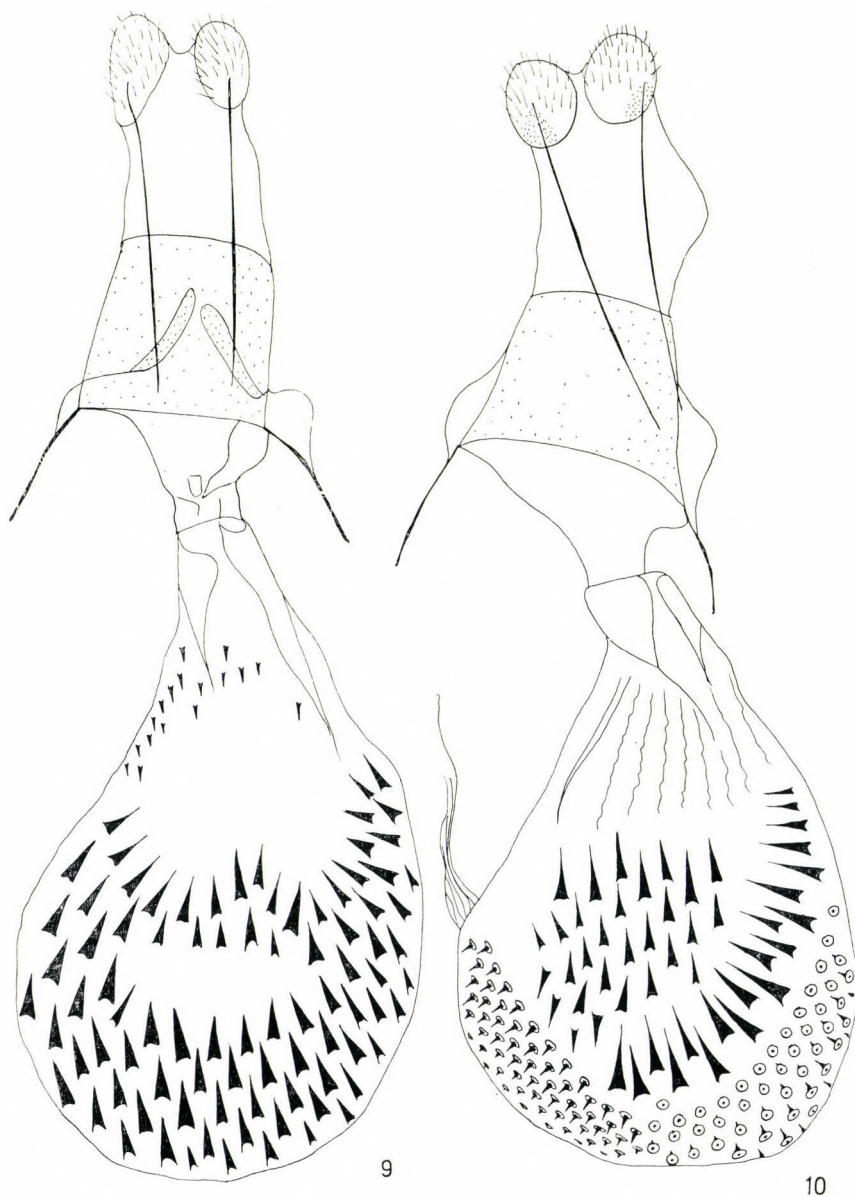


8. *Eupithecia lariciata mesodeicta* PROUT, 1938

(In) SEITZ: Die Gross-Schmetterling der Erde, Supplement ad IV., p. 208.

The subspecies, described from Kashmir, is new for the fauna of Korea.

I give the illustrations of the male and female genitalia and the very characteristic sternite VIII of the male in Figs. 12 and 13.



Figs. 9–10. 9 = Female genitalia of *Eupithecia lunata* DIETZE; 10 = Female genitalia of *Eupithecia invisa* DIETZE

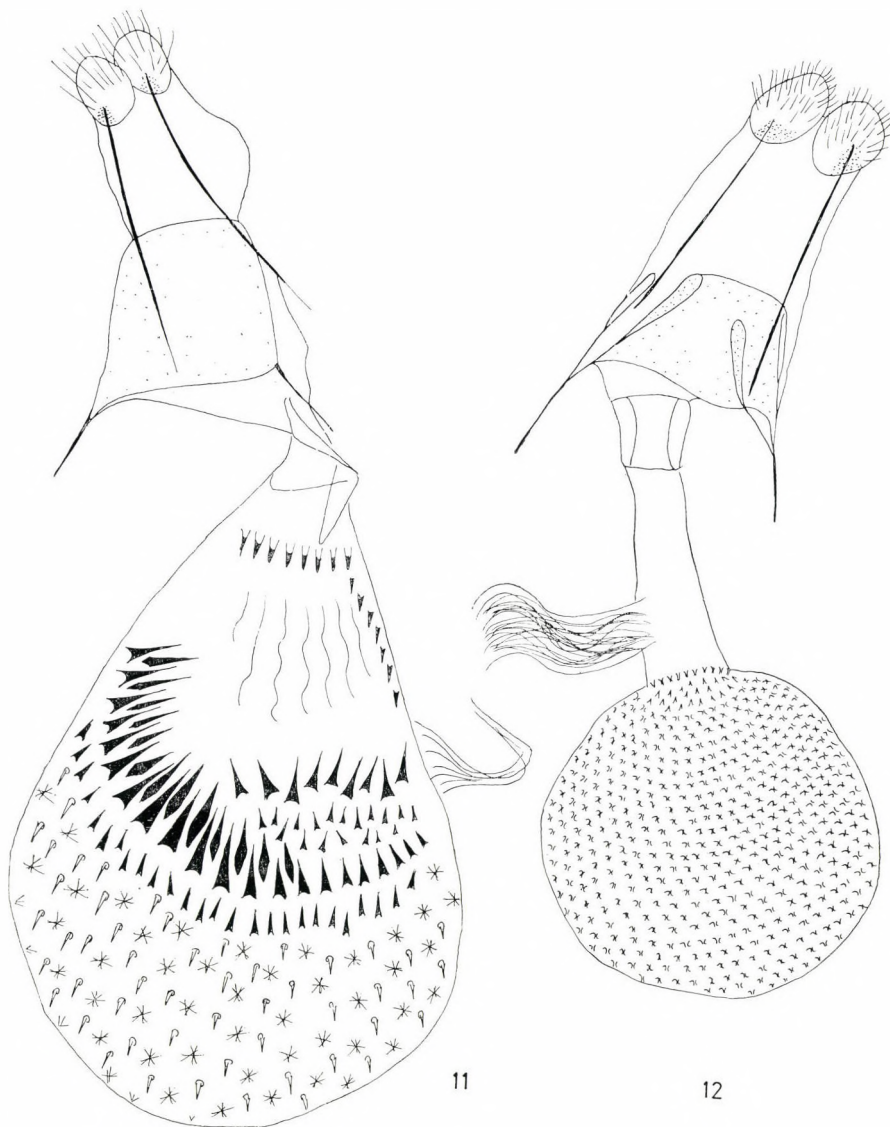
Examined material. Prov. Ryan-gang: Chann-Pay plateau, Sam-zi-yan, 1700 m, 23 July 1975 (No. 278), 1 ♂, 2 ♀♀, leg. J. PAPP et A. VOJNITS.

Slides: Nos. 10.799 (♂), 10.800, 10.822 (♀♀), gen. prep. A. VOJNITS.

9. *Eupithecia vulgata* HAWORTH, 1809

Lep. Britann., p. 350.

The species, described from Great Britain, occurs, according to VIIDALEPP (1975), also in Continental Europe, the Caucasus, Transcaucasia, Asia Minor, Iran, Central Asia, Mongolia. New for the fauna of Korea.



Figs. 11—12. 11 = Female genitalia of *Eupithecia mandschurica* STGR.; 12 = Female genitalia of *Eupithecia lariciata mesodeicta* PRT.



Examined material. Prov. Ryang-gang: Chann-Pay plateau, Sam-zi-yan, 1700 m, 24 July 1975 (No. 285), 1 ♀, leg. J. PAPP et A. VOJNITS.

Slide: No. 10.825 (♀), gen. prep. A. VOJNITS.

#### 10. *Callyclistis consueta* BUTLER, 1879

Ann. Mag. Nat. Hist., (5) 4: 442.

The species, ranging on Hokkaido and Honshu (Japan), is new for the fauna of Korea.



Fig. 13. Male genitalia, aedoeagus separated and sternite VIII, of *Eupithecia lariciat mesodeicta* PRT.

Examined material. Prov. Ryang-gang: Chann-Pay plateau, Sam-zi-yan, 1700 m, 24 July 1975 (No. 285), 2 ♀♀, leg. J. PAPP et A. VOJNITS.

Slides: Nos. 10.820, 10.821 (♀♀), gen. prep. A. VOJNITS.

#### 11. *Chloroclystis coronata* HÜBNER, 1808—1814

Samml. Eur. Schmett., Geom., Pl. 72, Fig. 372.

The species, ranging in Europe, the Caucasus, Transcaucasia, Iran, China and Siberia, is new for the fauna of Korea.

Examined material. Prov. Gang-von: district On-dzong, Kum-gang san, near Hotel Go-song, 250 m, 5 August 1975 (No. 319), 1 ♀, leg. J. PAPP et A. VOJNITS.

Slide: No. 10.818 (♀), gen. prep. A. VOJNITS.

## II. SPECIES FROM CHINA

(Descriptions by A. M. VOJNITS et E. DE LAEVER)

The delimitation of the *Eupithecia recens*-group is just as provisory as most of the subgrouping within the genus *Eupithecia* CURTIS: it largely serves an easier orientation. The species *Eupithecia recens* DIETZE is characterized by displaying the features of a number of species, but it appears to stand near *E. innotata* HUFN. The species relegable to this group are characterized by the more or less elongated fore wing, the short hind wing, the brownish to fuscous basic colour (occasionally with some other hue), the configuration of the ante- and postmedian stripes, as well as the marked discal spot. The male genitalia are characterized by the presence or absence of the tooth on the ventral margin of the valva; its development differs per species. The configuration of the aedoeagi and the bursae copulatricis of the females exhibit a great variety. It is therefore evident that a part of the species now relegated to this group will have to be reassigned after a better understanding of the allied Asiatic species.

1. *Eupithecia recens* DIETZE, 1903D. ent. Z. Iris, **16**: 349—351, Pl. 3, Fig. 26.

The species described from Central Asia (Sidemi, Kuku-Noor), displays as pointed out already by its author, the features of several specific groups. Thus there are characteristics resembling those of *Eupithecia egenaria* H. SCH., and of *E. innotata* HUFN., hence it is difficult to assign it to any one of the known "subgenera".

**D i a g n o s i s.** Average alar expanse of fore wings, on the basis of 39 specimens, 19 mm; extreme values: 17—20 mm (♂♂); and, on the basis of 46 exemplars, 19.5 mm; extreme values: 17—21 mm (♀♀). There is no essential difference in size between the specimens collected in various localities and at divers times. However, the variation as to colour and pattern is striking. The basic colour is generally more brownish or yellowish brown in exemplars deriving from the area of Tapai-shan, whereas those from the Mien-shan are rather greyish. The discal spot is rather linear, obscure or marked, in other cases a minute dot. The transverse lines are in many specimens obscure, in other ones sharply defined, their decurrence is more or less varying.

**G e n i t a l i a,** ♂: We have studied the type-specimen deposited in the Humboldt Museum, Berlin ("*Eupithecia recens* DIETZE ♂ Sidemi Type" "Geom.: 1950—593A Humboldt Mus. u. Univ. Berlin"), as well as our own slides. We found that the variability of some of the finer details is rather wide, but, on the whole, both the male and female genitalia are well characterizable.



In the males, especially marked features are the short and wide valva, its denticiform ventral projection, the short and wide uncus, and the asymmetrical termination of sternite VIII (Fig. 14); the female genitalia are very heavily sclerotized, the bursa copulatrix is elongated, its walls striated to rugulose, the chitinous spines are arranged in a sigmoid pattern, both anterior and posterior apophyses are thick and the papillae anales medium large (Fig. 16).



Fig. 14. Male genitalia, aedeagus separated and sternite VIII, of *Eupithecia recens* DIETZE

**Biology.** First stages and foodplant unknown. Although only a few specimens have been collected early in the year, it is assumably a bivoltine species: the first generation should be on the wing in May-June, the second by the end of July and in August.

**Distribution.** The species ranges from Central Asia to the Far East. In all likelihood, it occurs in many more localities than known so far, and even frequent in many places.

**Examined material.** 1. "Mien-shan (Prov. Shansi) Obere Höhe ca. 2000 m", 8. VII. (1 ♀), 27. VII. (1 ♀), 29. VII. (4 ♀♀), 30. VII. (1 ♀), 31. VII. (1 ♀), 1. VIII. (5 ♀♀), 2. VIII. (1 ♂), 3. VIII. (1 ♀), 5. VIII. (1 ♀), 6. VIII. (1 ♂, 1 ♀), 7. VIII. (4 ♀♀), 9. VIII. (1 ♂, 1 ♀), 10.

VIII. (1 ♀), 11. VIII. (1 ♀), 14. VIII. 1936 (2 ♂♂, 2 ♀♀). — 2. "Tapaishan im Tsinling Sued-Shensi. Ca. 1700 m", 20. V. (1 ♀), 26. VI. (1 ♀), 14. VII. (1 ♂), 5. VIII. (2 ♂♂), 6. VIII. (2 ♂♂, 1 ♀), 7. VIII. (1 ♀), 8. VIII. (5 ♂♂, 2 ♀♀), 9. VIII. (7 ♂♂, 1 ♀), 10. VIII. (3 ♂♂, 1 ♀), 12. VIII. (1 ♀, 1 ♂), 25. VIII. 1936 (1 ♂). — 3. "Tapaishan im Tsinling Sued-Shensi. Ca. 3000 m", 8. VIII. (2 ♂♂), 9. VIII. (2 ♂♂, 1 ♀), 10. VIII. (1 ♀), 11. VIII. (4 ♂♂, 7 ♀♀), 12. VIII. (2 ♂♂), 15. VIII. (1 ♀), 25. VIII. 1936 (1 ♂, 1 ♀). — 4. "Tapaishan im Tsinling Sued-shensi. (China)", 2. VIII. 1936 (1 ♀), leg. H. HÖNE. — The specimens are deposited in the Zoologisches Forschungsinstitut und Museum A. Koenig, Bonn, and in the Hungarian Natural History Museum, Budapest.

Slides: Nos. 10.870, 10.874, 10.875, 10.876, 10.893, 10.894, 10.895, 10.907, 10.908, 10.910, 10.911, 10.912, 10.915, 10.921, 10.935, 10.963, 10.964, 10.965, 10.967, 10.968, 10.970, 10.971 (♂♂); 10.871, 10.872, 10.873, 10.877, 10.892, 10.905, 10.906, 10.913, 10.916, 10.917, 10.920, 10.933, 10.936, 10.937, 10.938, 10.969, gen. prep. A. VOJNITS, 106, 293, 428, gen. prep. E. DE LAEVER (♀♀).

## 2. *Eupithecia repentina* sp. n.

(Derivation of specific name: *repentina* = incidental, unexpected)

**Diagnosis.** Generation I: Average alar expanse, on the basis of 3 specimens: 21.5 mm, extreme values: 21—22 mm (♂♂); on the basis of 8 exemplars: 21 mm, extreme values: 19—24 mm (♀♀). Fore wings elongated (yet by far not as much as those of the first generation of *Eupithecia vivida* sp. n., or of *E. irreperita* sp. n., described below). Costa of fore wing at apex, termen and dorsum at tornus, arcuate. Hind wing obtusely angulate. Basic colour of fore wing brown, partly greyish, partly with a specifically highly characteristic violet hue and sheen. Transverse stripes rather obsolescent; antemedian doubled, consisting of greyish striae, postmedian with a similar configuration; both slightly zig-zaggy, and postmedian rather sharply angulate at height of discal spot. This latter marked, elongated, black. A dark brown shadowy stripe and spots accompanying transverse stripes and occurring along costa. Outer two-thirds of wide terminal field slightly darker, with a greyish yellow, narrow, sinuous submarginal stripe. Major part of venation covered with dark scales, another conspicuous specific feature is the violet hue. Hind wing brownish yellow, rather brownish along dorsum and more yellowish toward tornus; the violet hue restricted mainly to basal area. Transverse stripes sinuous, fuscous, well discernible in brownish basic colour, otherwise obsolete. Discal spot minute, rounded, brown. Venation covered with dark scales, though to a lesser extent than on fore wings. Underside of wings yellowish brown, shiny, discal spots and transverse stripes brown. Cilia short, with yellowish grey to brownish striation, shiny. Generation II: alar expanse of the single known male 16.5 mm, of the two females: 17 and 18 mm, respectively. Wings considerably broader than in generation I, hind wings rounded. Basic colour of wings with a more greyish shade and a less observable violet hue, hind wings less yellowish. Transverse stripes evening out, median field better expressed, colour differences in outer field more expressed.



**Genitalia.** ♂: Uncus rather long, thick, ventrally slightly flattened, biapical. Valvae long, arcuate, narrowing apicad. Dorsum slightly, ventral arc more expressedly arcuate; latter with a minute and very acute spine medially. Vinculum broad, rounded. Aedoeagus short, cylindrical, with a larger and two smaller dentiform as well as a longer, arcuate chitinous formation. Base of sternite VIII widely excised, laterally concavely arcuate, posteriorly truncate with a small horn on both angles (Fig. 15); ♀: bursa copulatrix small, oval,  $3/5$  to  $2/3$  of its wall bearing chitinous spines — according to imbedding, chitinous field may appear larger and arrangement of spines sparser, or the field smaller and the spines denser. Sternite VIII transversely oblong, anterior and posterior apophyses thin and medium long. Papillae anales relatively large, shaped like a grain of rice, rather heavily sclerotized (Fig. 17).

**Biology.** First stages and foodplant unknown. Imago in two generations, in April and in August-October.

**Distribution.** Occurring in China. Locus typicus: Hoeng-Shan, 900 m (Province Hunan).

**Specific differences.** To a certain extent, the new species resembles *Eupithecia recens* DIETZE, but it is bigger, its basic colour darker and with an expressed violet hue, whereas *E. recens* DIETZE is largely yellowish or greyish yellow. The discal spot is more conspicuous, and also more elongated. Hind wing lighter than fore wing. The configuration of the genitalia is widely different, both for the males and the females. Males: valva long, narrow, the spiniform excrescence minute and acute (*recens*: valva short and wide, "tooth" robust), uncus comparatively long (*recens*: definitely short), and sternite VIII terminates symmetrically (*recens*: posteriorly asymmetrical). Females: bursa copulatrix small and oval, with an evenly distributed field of spines (*recens*: elongated, walls rugulose, heavily sclerotized, chitinous spines arranged in a sigmoid field).

Holotype ♂: "Hoeng-Shan, (900 m) Provinz Hunan, China 13. 4. 1933. H. HÖNE" "Gen. prep. No. 10.919 ♂ DR. A. VOJNITS, Budapest TTM". Paratypes: 1. "Hoeng-Shan. (900 m) Provinz Hunan, China", 12. IV. (2 ♂♂, 1 ♀), 13. IV. (1 ♂, 1 ♀), 15. IV. (3 ♀♀), 16. IV. (2 ♀♀), 19. IV. (1 ♀), 18. X. 1933 (1 ♀). — 2. "Tapaishan im Tsinling Sued-Shensi. Ca. 3000 m", 25. VIII. 1936 (1 ♂). — 3. "Li-kiang (China). Provinz Nord-Yuennan", 28. VIII. 1934 (1 ♀) leg. H. HÖNE.

Holotype deposited in the Zoologisches Forschungsinstitut und Museum A. Koenig, Bonn, paratypes in the same institution and in the Hungarian Natural History Museum Budapest.

**Slides:** Nos. 10.867, 10.919, 10.922, 10.940 (♂♂); 10.866, 10.868, 10.869, 10.917, 10.918, 10.939 (♀♀), gen. prep. A. VOJNITS.

### 3. *Eupithecia vivida* sp. n.

(Derivation of specific name: vividus = vivid)

**Diagnosis.** Generation I: Average expanse of wings on the basis of 24 specimens: 21.5 mm, extreme values: 18—22.5 mm (♂♂), respectively on the basis of 27 specimens: 22.5 mm, extreme values 21—24 mm (♀♀).

Wings considerably elongated. Fore wing narrow, long. Costa arcuate at base, termen and dorsum straight, apex pointed, termen extraordinarily steep, subtending a very obtuse angle with dorsum. Hind wing short, angular. Basic colour of fore wing generally fuscous, proportions of grey, brown and yellow colours rather divers. Both antemedian and postmedian composed of 2—3 narrow, parallel lines each, broken in a sharp and acute angle in their costal

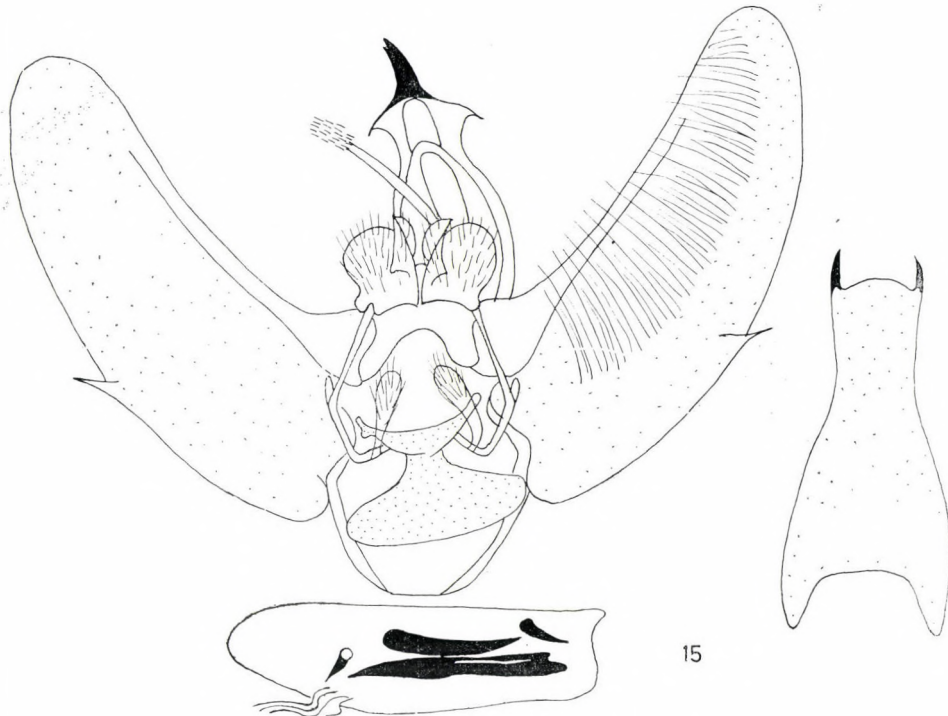
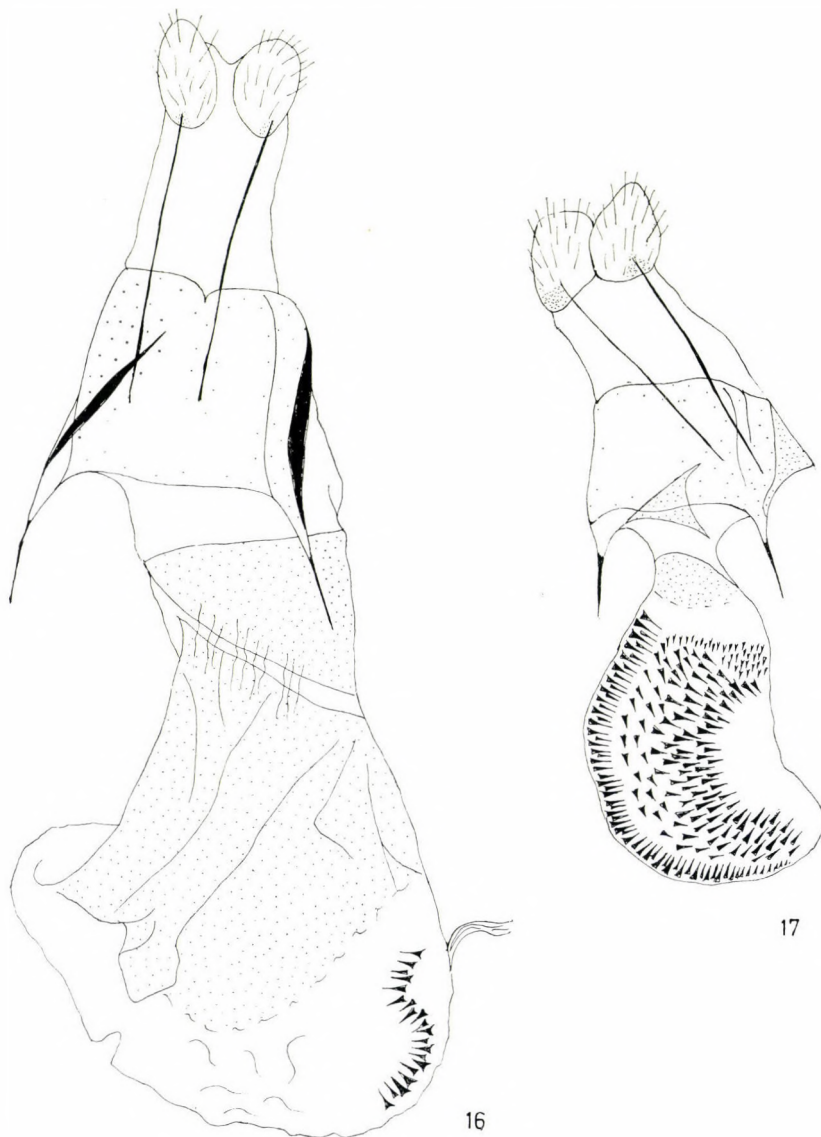


Fig. 15. Male genitalia, aedeagus separated and sternite VIII, of *Eupithecia repentina* sp. n.

third. Median field bisected by a more obtusely broken transverse stripe consisting of two lines. Discal spot long, marked, a black line, nearly perpendicular to costa. Terminal field very wide, with a greyish yellow submarginal stripe. Veins partially covered with dark brown or black scales. Hind wing brownish white, infuscated yellow or grey; sinuous transverse stripes, beginning at base, gradually obsolescent before middle of wing. Subterminal and subdorsal parts fuscous. Discal spot minute, black. Underside of wings sericeous, light, fore wing only slightly lighter than hind wing, pattern elements pale, excepting discal spots and a blackish brown spot on costa of fore wing. Cilia short, striated brown and greyish yellow. Generation II: Average expanse on the basis of 5 specimens: 17 mm, extreme values: 16—20 mm (♂♂), no data concerning females.



Wings less elongated than in generation I. Tornus of fore wing rather rounded. Basic colour of fore wing with a preponderance of greyish hue, pattern elements less conspicuous. Hind wings slightly darker, also undersides of wings and cilia darker. On the whole, specimens representing generation II display a more even coloration (thereby resembling, both in this feature and in the striking difference in size, *Eupithecia innotata* HUFN.).



Figs. 16—17. 16 = Female genitalia of *Eupithecia recens* DIETZE; 17 = Female genitalia of *Eupithecia repentina* sp. n.

**Genitalia.** ♂: Uncus very short, thick, biapical. Valvae short, wide, their ventral margins concavely arcuate between base and midline, in middle with an exclinate, dentiform projection. Aedoeagus rather large, cylindrical, slightly widening, with 2—3 distinct and ten acute, arcuate chitinous formations arranged in rows. Base of sternite VIII wide, laterally angulately excised and concavely arcuate, abruptly tapering apicad; its elongated apex peculiarly

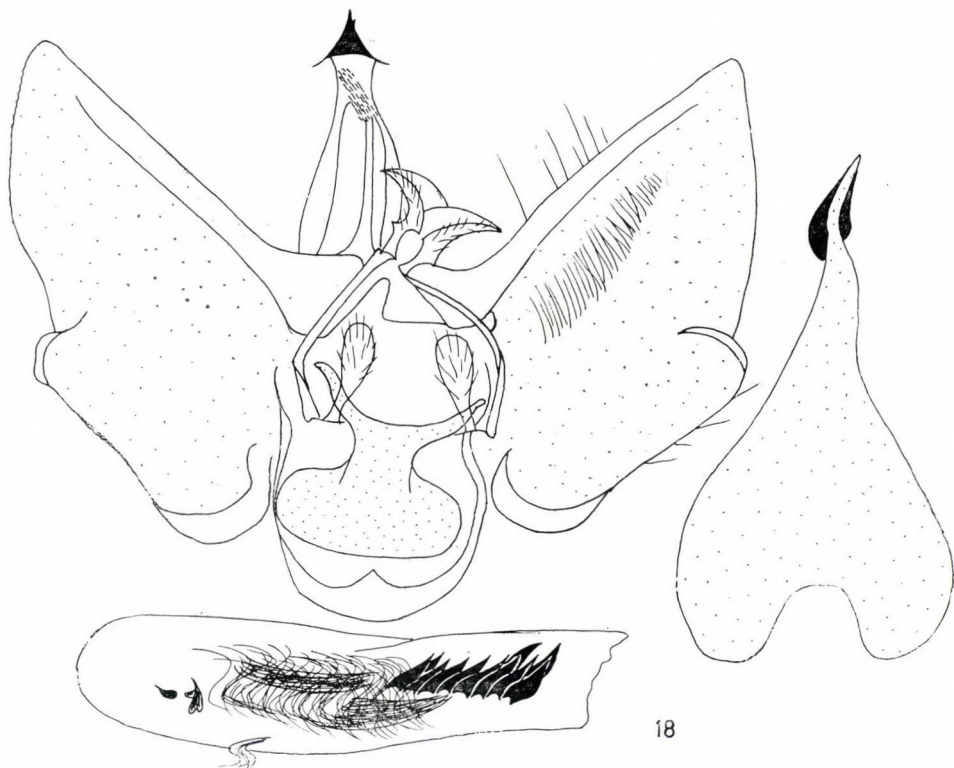


Fig. 18. Male genitalia, aedoeagus separated and sternite VIII, of *Eupithecia vivida* sp. n.

sagittiform; plane of sternite dorsally arcuate (Fig. 18); ♀: bursa copulatrix large, oval, its anterior portion with a conglomeration of long, robust and rather irregularly spaced chitinous spines; sclerotized wall of bursa striated posteriorly. Antrum wide, heavily sclerotized. Sternite VIII approximately quadrate. Anterior apophyses medium thick and short, posterior ones thinner and more elongated. Papillae anales resembling grains of rice (Fig. 20).

**Biology.** First stages and foodplant unknown. Imagos representing two generations: the majority of specimens captured in March and some in April, the rest in August—September.

**Distribution.** Occurring in China. Locus typicus: Li-kiang (Province North Yuennan).



**Specific differences.** Concerning external morphology, the new species resembles *Eupithecia innotata* HUFN. and *E. ochridata* PINKER. This holds especially for specimens of the second brood, while those of the first generation, having extraordinarily elongated fore wings with a vivid pattern, rather differ from the two species mentioned above. In contrast with the first generation, those of the second brood have slightly wider wings than the imagos of either *E. innotata* HUFN. or *E. ochridata* PINKER. Apart from these resemblances, the differences in the configuration of the genitalia are so great that a detailed comparison would be superfluous.

Holotype ♀: "Li-kiang (China). X Provinz Nord-Yuennan. 17.3. 1935. H. HÖNE" "Gen. prep. No. 11.057 ♀ DR. A. VOJNITS, Budapest TTM MÉSZÁR Á.". Paratypes: 1. "Li-kiang (China), X Provinz Nord Yuennan", 8. III. (1 ♂), 9. III. (2 ♂♂, 2 ♀♀), 11. III. (2 ♀♀), 12. III. (1 ♂), 13. III. (1 ♂, 3 ♀♀), 14. III. (1 ♂), 17. III. (1 ♂, 2 ♀♀), 18. III. (1 ♂, 1 ♀), 19. III. (2 ♂, 2 ♀♀), 20. III. (2 ♂♂), 21. III. (3 ♀♀), 22. III. (1 ♂), 23. III. (1 ♂, 2 ♀♀), 24. III. (1 ♀), 25. III. (1 ♀), 28. III. (3 ♀♀), 31. III. (1 ♀), 2. IV. (1 ♀), 3. IV. (1 ♂, 1 ♀), 5. IV. (1 ♂), 20. IV. (1 ♀), 22. IV. (1 ♀), 24. IV. (1 ♀), 25. IV. (1 ♂), 26. VIII. (1 ♂), 27. VIII. (1 ♂), 30. VIII. (1 ♂), 6. IX. (1 ♂), 24. IX. 1935 (1 ♂). — 2. "Li-kiang", 14. III. 1935 (1 ♂). — 3. "Butang (Tibet). Im Tal des Yangtze (ca. 2800 m)", 5. IV. (1 ♀), 6. IV. 1936 (1 ♀), leg. H. HÖNE.

Holotype deposited in the Zoologisches Forschungsinstitut und Museum A. Koenig, Bonn, paratypes in the same institute and in the Hungarian Natural History Museum, Budapest.

**Slides:** Nos. 10.881, 10.884, 10.901, 10.929, 10.961, 10.985, 10.996, 11.003, 11.012, 11.018, 11.020, gen. prep. A. VOJNITS, 11.051, 11.052, 11.053, 11.054, 11.055, gen. prep. Á. MÉSZÁR, 212, 222, 344, 371, gen. prep. E. DE LAEVER (♂♂); 10.878, 10.885, 10.902, 10.904, 10.986, 10.987, 10.988, 10.993, 10.994, 10.995, 11.005, 11.006, 11.008, 11.009, 11.010, 11.011, 11.013, gen. prep. A. VOJNITS, 11.024, 11.025, 11.026, 11.050, 11.056, 11.058, gen. prep. Á. MÉSZÁR, 209, 210, 228, 345, gen. prep. E. DE LAEVER ♀♀.

#### 4. *Eupithecia irreperita* sp. n.

(Derivation of specific name: irreperitus = not found, hidden.)

**Diagnosis.** Generation I: Average alar expanse of fore wings on the basis of 3 specimens: 23 mm, extreme values: 21—26 mm (♂♂), alar expanse of the single known female specimen: 18 mm. Fore wings elongated; costa hardly, termen and dorsum not at all, arcuate. Angles of hind wing obtuse, margins arcuate. Basic colour of fore wing fuscous, without any yellowish hue. Transverse stripes rather obsolescent. Discal spot long, black. Veins covered with scales darker than basic colour. Hind wing greyish white, discal spot minute, round, black or dark grey. Underside of wings greyish white, pattern elements grey. Generation II: Average alar expanse of fore wings on the basis of 6 specimens: 21.5 mm, extreme values: 21—22.5 mm (♂♂), or on the basis of 8 exemplars: 21 mm, extreme values: 20—22 mm (♀♀). Wings broader than in generation I, basic colour darker, hind wing of some specimens nearly as dark as that of fore wings.

**Genitalia.** ♂: Valvae rather wide, short. Both dorsal and ventral margins straight, termen slightly sigmoid, valva as a whole resembling an

isosceles triangle. Outer angle of valva with a robust and long, a robust but half as long, and basally five short and broad chitinous spines. Uncus medium long, wide, biapical. Vinculum elongated. Aedoeagus long, cylindrical, slightly widening, with four superimposed and apically elongated as well as with

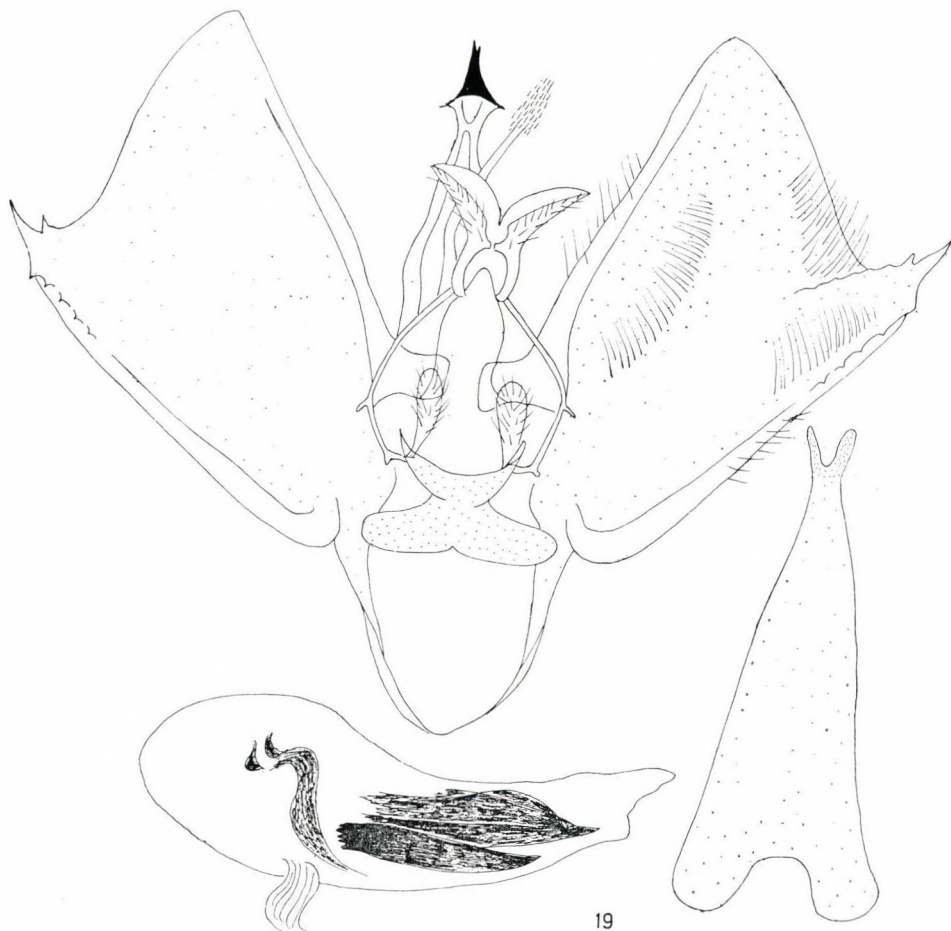


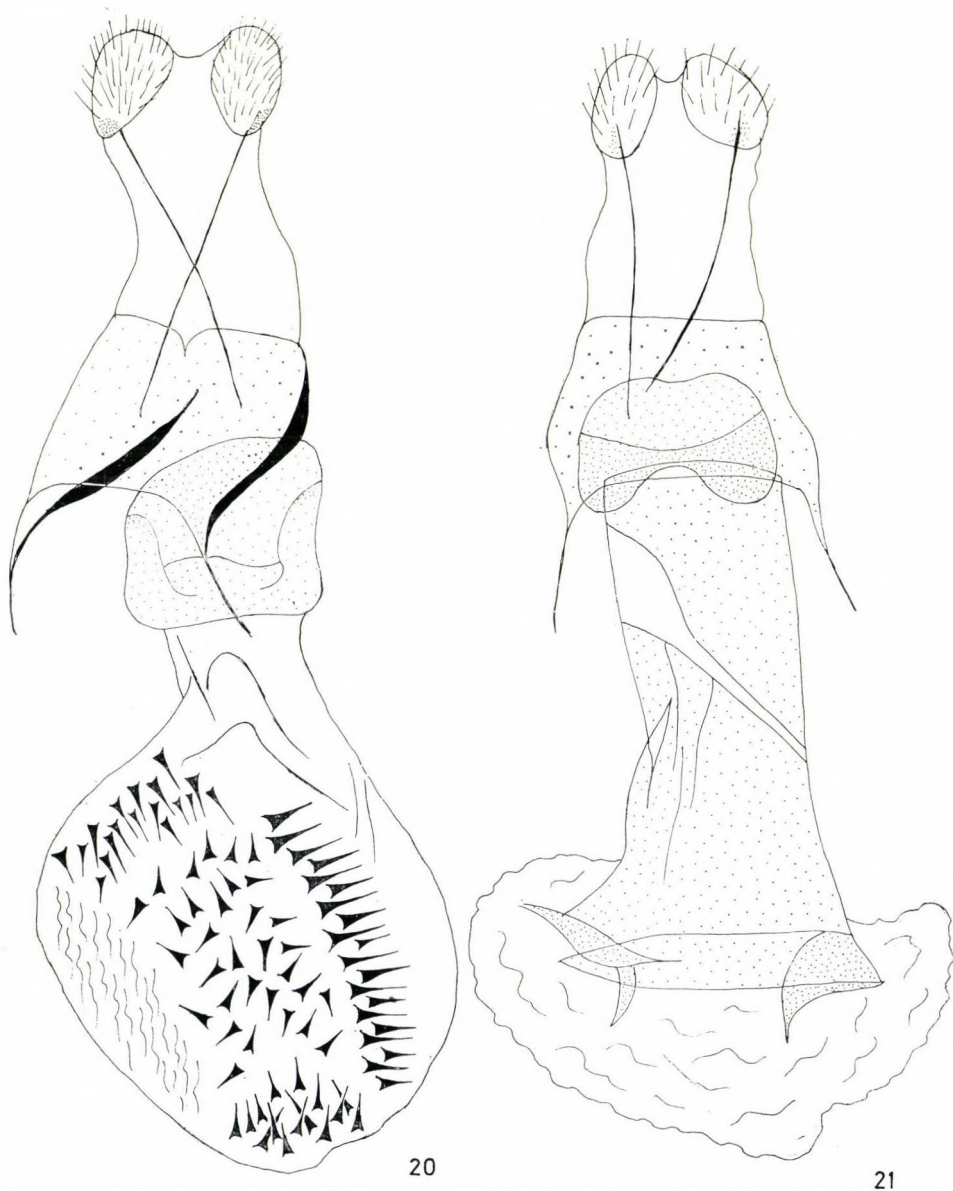
Fig. 19. Male genitalia, aedoeagus separated and sternite VIII, of *Eupithecia irreperta* sp. n. a single twisted chitinous formation. Broad base of sternite VIII excised, arcuately attenuating posteriorad, terminally heavily sclerotized, furciform (Fig. 19); ♀: bursa copulatrix highly conspicuous, heavily sclerotized, long, striately tubiform, its wall basally thinning and its shape widening. Antrum conspicuously sclerotized. Sternite VIII small, square; both anterior and posterior apophyses short and thin. Papillae anales small (Fig. 21).

**Biology.** First stages and bionomics unknown. Imagos captured in two generations: in April—May, and in August—first days of September.



**Distribution.** Found in China, but occurring also in Tibet. Locus typicus: A-tun-tse, 4000 m (Province North Yuennan).

**Specific differences.** On the basis of external morphology, the delimitation of the first generation imago of the new species from *Eupithecia*



Figs. 20–21. 20 = Female genitalia of *Eupithecia vivida* sp. n.; 21 = Female genitalia of *Eupithecia irreperta* sp. n.

*vivida* sp. n. is rather difficult. As a whole, it displays a greyish rather than a yellowish hue, especially as regards the hind wings (which are also less angulate). The flight period is also later, in April—May, and not in March—April. It is easier to distinguish the second brood: the imagoes of *E. irreperita* sp. n. are bigger, their colour essentially darker, their hind wings conspicuously deeper in colour, with the pattern partially merged in the basic colour. The flight period is also slightly earlier. The configuration of the genitalia essentially differs in both sexes from that of *E. vivida* sp. n. It should be noted that the form of sternite VIII slightly resembles that of *E. sobrinata* HBN., and *E. ericeata* RBR.

Holotype ♂: "A-tun-tse (Nord Yünnan) Mittlere Höhe (ca. 4000 m) 11. 8. 1936. H. HÖNE" "Gen. prep. No. 10.882 ♂ DR. A. VOJNITS Budapest TTM". Paratypes: 1. "A-tun-tse (Nord-Yünnan) Mittlere Höhe (ca. 4000 m)", 8. VIII. (1 ♀), 11. VIII. (1 ♂, 1 ♀), 12. VIII. (1 ♂), 15. VIII. (1 ♂), 16. VIII. (1 ♂, 1 ♀), 30. VIII. (1 ♀), 3. IX. 1936 (1 ♂). — 2. "A-tun-tse (Nord Yünnan) Obere Höhe (ca. 4500 m)", 9. VIII. 1936 (1 ♀). — 3. "Batang (Tibet). Im Tal des Yangtze (ca. 2800 m)" 20. IV. (1 ♂), 23. IV. (1 ♂), 15. V. 1936 (1 ♂). — 4. "Batang (Tibet). Untere Urwaldzone (ca. 3800 m)", 12. V. (1 ♀), 2. VIII. (2 ♀♀), 11. VIII. 1936 (1 ♀).

Holotype deposited in the Zoologisches Forschungsinstitut und Museum A. Koenig, Bonn, paratypes in the same institute and in the Hungarian Natural History Museum, Budapest.

Slides. Nos. 10.879, 10.880, 10.998, 11.001, 11.019, gen. prep. A. VOJNITS, 97, 99, 225, gen. prep. E. DE LAEVER (♂♂); 10.887, 10.991, 11.000, gen. prep. A. VOJNITS, 11.023, gen. prep. Á. MÉSZÁR, 105, 118, 227, 466, gen. prep. E. DE LAEVER (♀♀).

### 5. *Eupithecia eximia* sp. n.

(Derivation of specific name: *eximius* = invaluable)

**Diagnosis.** Average alar expanse of fore wings on the basis of 7 specimens: 21 mm, extreme values: 20—22 mm (♂♂), and on the basis of 9 specimens: 21.5 mm, extreme values: 21—23 mm (♀♀). Fore wings elongated, yet not acute but rather narrow. Costa of fore wing evenly arcuate, rather more at apex. Also termen and dorsum arcuate, tornus rounded so that termen and dorsum forming an even and contiguous arc. Hind wing rather wide and obtusely angulate. Basic colour of fore wing a vivid yellowish brown, in some specimens definitely fawn-coloured, in other exemplars slightly more greyish. Double transverse stripe of antemedian forming three slight arcs, with a small dentiform projection towards median field. Basic field bisected by a narrow, brown line decurrent in two semicircles. Postmedian incipiently (at costa) doubled, sigmoid, then obsolescent, discal spot in median field circumvented by a Z-shaped dark brown line. Terminal field attenuating towards tornus, divided by a pale yellowish submarginal line, backed internally by a deep brownish stripe. Darker brownish spots present along costa, at starting points of transverse stripes, and in apical field. Discal spot black or dark brown, elongated, conspicuous. Hind wing white, yellowish white or greyish white, shiny. Dorsum emitting dark transverse stripes, soon becoming obsolescent.



Discal spot minute, round, dark brown. Underside of fore wings pale yellowish brown, that of hind wings white, discernible pattern elements brown. Cilia medium long, striated white — dark brown or yellow — dark brown, respectively, shiny.

**Genitalia.** ♂: Uncus medium long, robust, biapical. Valvae narrow, long, dorsum basally convexedly then concavely arcuate, apex pointed.

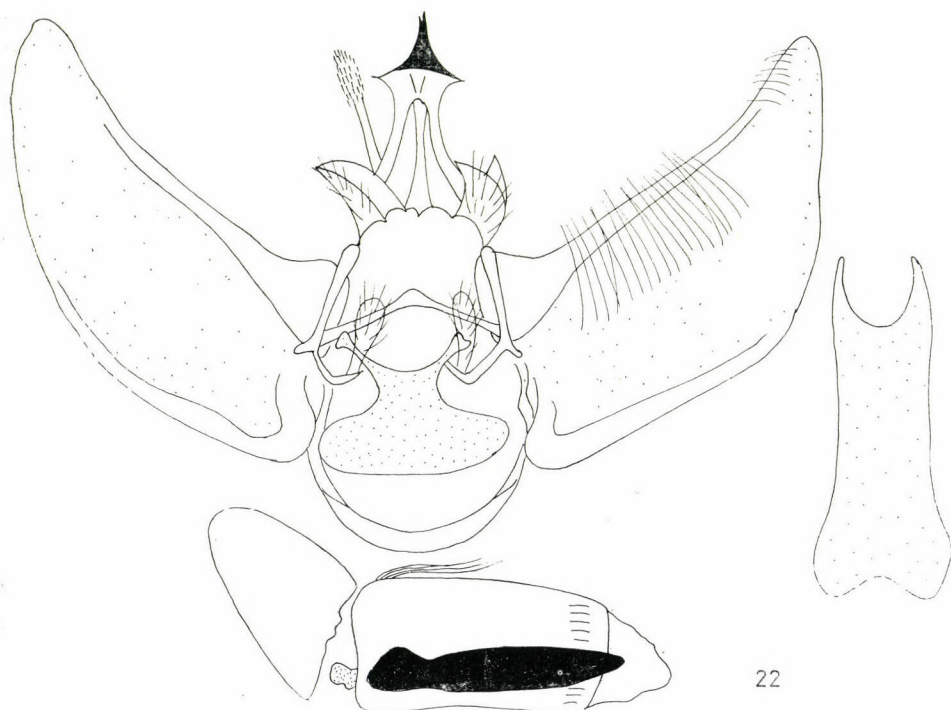


Fig. 22. Male genitalia, aedeagus separated and sternite VIII, of *Eupithecia eximia* sp. n.

Vinculum wide, rounded. Aedeagus short, cylindrical, thick, with a smaller, a longer cylindrical, and a very large, obtusely ending, spiniform chitinous formation. Base of sternite VIII hardly widening, very slightly excised, laterally nearly parallel, medially slightly concave, terminally with two robust, corniform chitinous excrescences (Fig. 22); ♀: bursa copulatrix relatively very small, irregularly piriform, its two-thirds padded with minute chitinous spines arranged more or less densely, while somewhat larger and very densely spaced spines appearing in a sigmoid situation. Sternite VIII square, small, anterior and posterior apophyses medium long and wide. Papillae anales relatively large, rounded (Fig. 23).

**Biology.** First stages and foodplant unknown. Presumably univoltine, imagos collected in June—July—August.

**Distribution.** Collected so far in China and in Tibet. Locus typicus: A-tun-tse, 4500 m (Province North Yuennan).

**Specific differences.** Concerning external morphology, the new species is primarily characterized by the light fore wings with a gaudy pattern and the white or nearly whitish hind wings. On the whole, it gives a considerably gaudier and lighter impression than *Eupithecia irreperita* sp. n., and *E. vivida* sp. n. The male genitalia are characterized by the absence of the dentiform projection of the valva and the presence of the very large and thick chitinous spine in the aedoeagus, thereby differing sharply from both species mentioned previously. Sternite VIII slightly resembles that of *E. repentina* sp. n. In the small bursa copulatrix of the female, the row of chitinous spines arranged sigmoidally is a conspicuous feature.

Holotype ♂: "A-tun-tse (Nord Yünnan) Obere Höhe (ca. 4500 m) 7. 7. 1936. H. HöNE" "Gen. prep. No. 11.015 ♂ Dr. A. VOJNITS Budapest TTM". Paratypes: 1. "A-tun-tse (Nord Yünnan) Mittlere Höhe (ca. 4000 m) 17. 8. 1936 H. HöNE", 12. VI. (1 ♀), 13. IV. (1 ♂), 13. VIII. (1 ♀), 17. VIII. 1936 (1 ♀). — 2. "A-tun-tse (Nord Yünnan) Obere Höhe (ca. 4500 m)", 8. VII. (1 ♂), 9. VII. (1 ♂), 14. VII. (1 ♂), 15. VII. (1 ♂), 18. VII. (1 ♀), 31. VII. (1 ♀), 11. VIII. (1 ♂), 13. VIII. 1936 (1 ♀). — 3. "A-tun-tse (Nord Yünnan) Talsohle (ca. 3500 m)", 18. VI. 1936 (1 ♀). — 4. "Batang (Tibet). Untere Urwaldzone. (Ca. 3800 m)", 11. VIII. 1936 (1 ♀), leg. H. HöNE. — 5. "Sung-pan-ting Szetschwan Exped. Stötzner Coll. Dr. WHERLI, Basel", 1 ♂. Holotype deposited in the Zoologisches Forschungsinstitut und Museum A. Koenig, Bonn, paratypes in the same institute and in the Hungarian Natural History Museum, Budapest.

**Slides:** Nos. 10.886, 10.890, 11.015, 11.016, gen. prep. A. VOJNITS, 57, 218, gen. prep. E. DE LAEVER (♂♂); 10.997, 10.999, 11.014, 10.017, gen. prep. A. VOJNITS, 11.021, 11.022, gen. prep. Á. MÉSZÁR, 58, 101, 219, gen. prep. E. DE LAEVER (♀♀).

## 6. *Eupithecia extrinseca* sp. n.

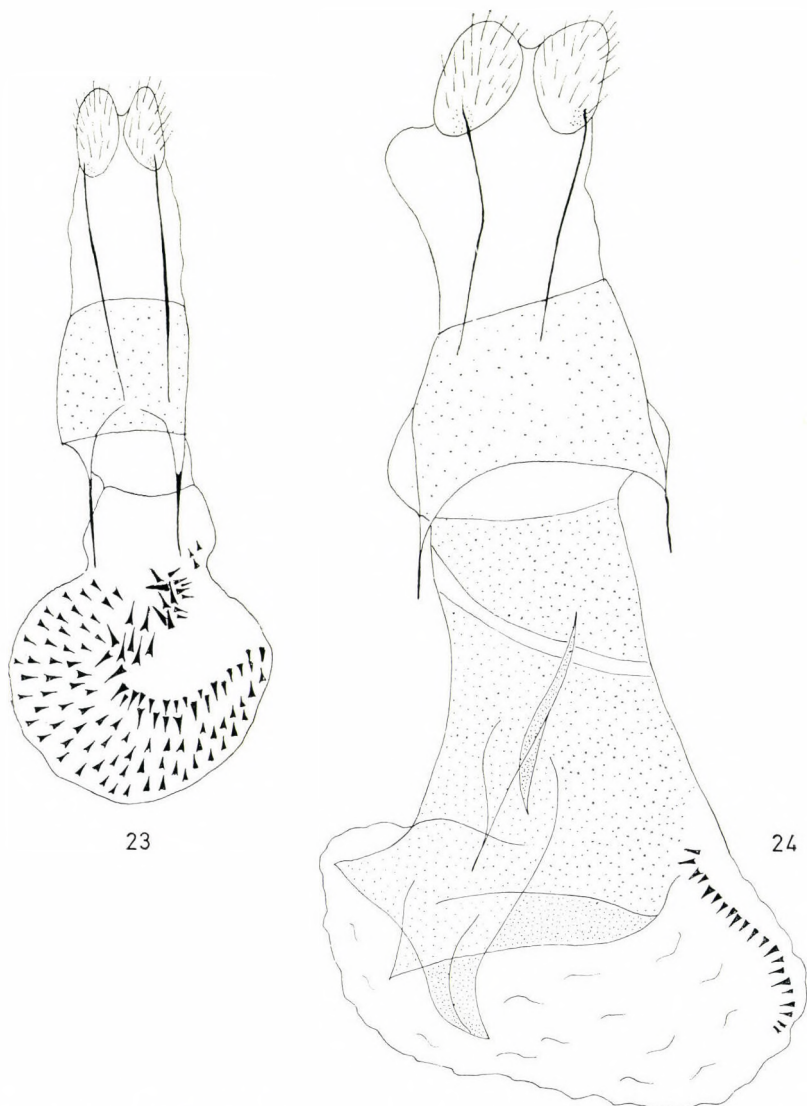
(Derivation of specific name: extrinsecus = external)

**Diagnosis.** Average alar expanse on the basis of 4 females: 21 mm, extreme values: 19—24 mm. Fore wings elongated, costa arcuate near base, termen slightly and evenly arcuate, dorsum straight. Hind wing obtusely angulate. Basic colour of fore wing pale brown. Antemedian consisting of two parallel and narrow lines, broken at right angles at costa and at an obtuse angle towards dorsum, backed towards median field by a shady brown stripe. Basal field bisected by a brown stripe. Postmedian also composed of two parallel brown lines, broken at a right angle near costa, then zig-zaggy to dorsum, also accompanied by a shaded stripe in median field, and another wide shaded stripe decurrent on its terminal side, near costa, following the right-angled portion of postmedian. Discal spot long, marked, dark brown, nearly accumbent to postmedian. Terminal field wide, its one-third part towards postmedian yellowish, lighter than basic colour. Terminal field with a yellowish submarginal stripe, medially obsolescent, and conspicuous only at tornus. Hind wing pale brownish white, with a greyish or yellowish suffusion. Transversal stripe<sub>s</sub>



sinuous, nearly contiguous along termen, otherwise decurrent from dorsum to middle of wing. Discal spot minute, brown. Underside of wings pale yellowish brown, shiny, pattern obscure, excepting discal spots. Cilia short, striated yellowish brown to brown, shiny.

**Genitalia.** ♀: Bursa copulatrix more or less fungiform, in its major part heavily sclerotized, this portion rugulose. Basal portion of bursal wall



Figs. 23–24. 23 = Female genitalia of *Eupithecia eximia* sp. n.; 24 = Female genitalia of *Eupithecia extrinseca* sp. n.

soft, there with minute chitinous spines in a sigmoid arrangement. Sternite VIII square, anterior and posterior apophyses short and thin. Papillae anales small, shaped like grains of rice (Fig. 24). ♂: unknown.

**Biology.** First stages and foodplant unknown. Every imago collected so far flew in August.

**Distribution.** Occurring in China. Locus typicus: Tapaishan, 3000 m (South Shensi).

**Specific differences.** Concerning external morphology, *Eupithecia extrinseca* sp. n. seems related to *E. vivida* sp. n. However, it has wider wings, its colour paler, the decurrence of the ante- and postmedians different. There is a striking difference also between the undersides of the two species: that of *E. vivida* sp. n. displays a more extensive pattern. On the other hand, the female genitalia greatly resemble those of *E. recens* DIETZE, differing only in certain details. This is all the more interesting since the differences concerning external morphology are evident between *E. extrinseca* sp. n. and *E. recens* DIETZE.

Holotype ♀: "Tapaishan im Tsinling Sued-Shensi. Ca. 3000 m. 19. 8. 1936. H. HÖNE" "Gen. prep. No. 10.932 ♀ DR. A. VOJNITS Budapest TTM". Paratypes: 1. "Tapaishan im Tsinling Sued-Shensi (China) L", 6. VIII. 1935 (1 ♀). — 2. "Tapaishan im Tsinling Sued-Shensi. Ca. 3000 m", 12. VIII. 1936 (1 ♀). — 3. "Mien-shan (Prov. Shensi) Obere Höhe ca. 2000 m", 2. VIII. 1937 (1 ♀), H. HÖNE. Holotype deposited in the Zoologisches Forschungsinstitut und Museum A. Koenig, Bonn, paratypes in the same institute and in the Hungarian Natural History Museum, Budapest.

**Slides:** Nos. 10.931, 10.932, gen. prep. A. E. DE LAEVER (♀♀).

## 7. *Eupithecia fatigata* sp. n.

(Derivation of specific name: fatigatus = fatigued)

**Diagnosis.** Alar expanse of the single known male specimen: 19 mm, average alar expanse on the basis of 8 specimens: 21 mm, extreme values: 18—24 mm (♀♀). Fore wings elongated, costa slightly broken at 4/5 from costa, apex pointed, termen and dorsum arcuate only at tornus. Hind wing evenly arcuate, apex obtuse, tornus more acute. Basic colour of fore wings brown or yellowish brown, pattern elements brown, dark brown, or fuscous. Antemedian twice angulate, composed of two narrow parallel brown lines, delimiting a wide basal field with several zig-zaggy lines. Postmedian also consisting of two lines, describing a sharper curve near costa and a slighter one towards dorsum. Terminal field wide, its exterior three-fourths darker, this section divided by a narrow, yellow, sinuous submarginal line. Discal spot longer, rather wide, black, appressed to or even joining postmedian stripe. An elongated, brown spot each near ante- and postmedians on costa. Discal vein as well as terminal 1—2 mm of veins ending at termen covered with dark brown scales. Hind wing light yellowish brown, median field rather whitish, trans-



verse stripes brown, discernible mostly near termen and dorsum. Discal spot minute, round, brown. Underside of wings shiny, brownish yellow, pattern elements brown, discal spots dark brown. Cilia medium long, striated yellow to yellowish brown, shiny.

**Genitalia.** ♂: Uncus short, thick, biapical. Valvae shaped like an orange section, dorsum very slightly arcuate, apex rounded, ventral margin



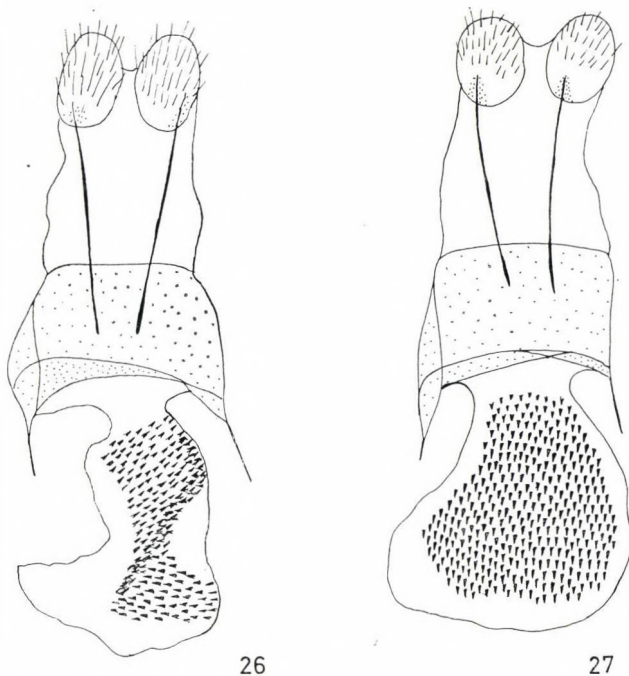
Fig. 25. Male genitalia, aedeagus separated and sternite VIII, of *Eupithecia fatigata* sp. n.

evenly arcuate, but slightly concave medially. Vinculum obtusely angulate. Aedeagus cylindrical, with three indefinitely shaped chitinous formations. Sternite VIII considerably elongated, basally deeply excised, posteriorly with two robust appendages, these slightly widening terminally (Fig. 25); ♀: bursa copulatrix small, squat, its 4/5 padded with densely arranged chitinous spines; if bursa imbedded in a slightly coiled position, then chitinous field exhibiting a characteristic, X-shaped picture. Sternite VIII relatively large, wide, transversally oblong. Anterior apophyses medium thick and long, posterior apophyses long. Papillae anales large, oval (Figs. 26—27).

**Biology.** First stages and foodplant unknown. Imagos collected in a single generation, in July—August—September.

**Distribution.** Occurring in China. Locus typicus: A-tun-tse, 4500 m (Province North Yuennan).

**Specific differences.** Concerning external morphology, *Eupithecia fatigata* sp. n. stands nearest to *E. vivida* sp. n., and differing from it principally by the ante- and postmedian lines composed of fine double lines. Also, the discal spot is wider on the fore wing, the hind wing is relatively lighter. In well set specimens, the obtuse angulation of the costa of the fore wing is also conspicuous, as well as the arcuate form of the hind wing. On the



Figs. 26—27. Female genitalia of *Eupithecia fatigata* sp. n.

basis of the genitalia, the new species is satisfactorily different from all known congeners. The arcuate valva, resembling an orange slice, is characteristic, and especially so the deeply incised sternite VIII. On the whole, the female genitalia are small, stout.

Holotype ♀: "A-tun-tse (Nord Yünnan) Obere Höhe (ca. 4500 m) 8. 7. 1936 H. HÖNE" "Gen. prep. No. 11.004 ♀ DR. A. VOJNITS Budapest TTM". Paratypes: 1. "A-tun-tse (Nord Yünnan) Mittlere Höhe (ca. 4000 m)", 28. VII. (1 ♀), 6. IX. (♂). — 2. "A-tun-tse (Nord Yünnan) Obere Höhe (ca. 4500 m)", 7. VII. (1 ♀), 8. VII. (3 ♀♀), 9. VII. (1 ♀), 11. VIII. (1 ♀), 15. VIII. (1 ♀), leg. H. HÖNE.

Holotype deposited in the Zoologisches Forschungsinstitut und Museum A. Koenig, Bonn, paratypes in the same institute and in the Hungarian Natural History Museum, Budapest.

Slides: Nos. 10.962 (♂), 10.889, 10.900, 10.902, 10.903, 11.004, 11.007, gen. prep. A. VOJNITS, 11.047, 11.049, gen. prep. Á. MÉSZÁR (♀♀).

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Keeper of Lepidoptera, Koenig Museum, Bonn, to DR. W. FORSTER, at that time Director of the Museum in Munich, and to Prof. E. G. F. SAUER, Director, Koenig Museum, Bonn. I am especially grateful to the Alexander von Humboldt Foundation for the stipend making my studies possible in these Museums.

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## NEW SAWFLY SPECIES FROM KOREA (HYMENOPTERA: SYMPHYTA)\*

By

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A number of recently collected sawfly species is discussed. The description of six new species is given: *Pseudostromboceros frontalis* sp. n., *Caliroa carinata* sp. n., *Fenella continuata* sp. n., *F. crenata* sp. n., *F. excavata* sp. n., *Tenthredo pappi* sp. n. New sexes are *Nesodiprion biremis* KNW. ♂ n., *Fenella nigrita* WESTW. ♂ n. Keys to the species of *Pseudostromboceros* TAKEUCHI and *Fenella* WESTWOOD are also submitted.

The third expedition of Hungarian zoologists to Korea (PAPP and VOJNITS, 1976; No. 264-331) collected a small number of sawflies, six of which proved to be new to science.

The material is treated in systematical order and the new species are included therein. Where it was thought necessary, notes are appended to some species, while the abbreviations are the same as used in my previous paper (ZOMBORI, 1974).

The two recently published references to Korean sawfly species are the book of CHU TONG-LJUL (1969) and the paper of KIM (1970), the former will be referred to as LKI, the latter as FFK. All the types of the subsequently described species are deposited in the Hymenoptera Collection in the Zoological Department of the Hungarian Natural History Museum, Budapest.

### Pamphiliidae

***Cephalcia lariciphila*** (WACHTL, 1898). — Prov. Ryang-gang: Chann-Pay plateau, 24 km NW from Sam-zi-yan along the road to Mt. Pektusan, 2000 m, 24 July 1975 (No. 280), 1 ♂.

WACHTL's specific name was recently re-established by BENEŠ (1976). His very thorough study of the European *Cephalcia* PANZ. comes very useful in separating the species of this fairly difficult genus. The Korean specimen runs down in various current keys to *C. alpina* (KLUG, 1808), but BENEŠ's revision definitely shows the distinctness of the species *lariciphila*.

FFK lists only two *Cephalcia* PANZ. species; *lariciphila* is not among them, thus it is considered as new to the fauna of Korea.

Distribution: North and Central Europe to Siberia (Irkutsk), Korea.

### Argidae

***Arge clavicornis expansa*** (KLUG, 1834). — Pyong-Sung: Bek-sung-li, Za-mo san, 60 km NE from Pyongyan, 1 Aug. 1975 (No. 304), 1 ♂.

\* Zoological Collectings by the Hungarian Natural History Museum in Korea, No. 37.



Neither LKI nor FFK lists this subspecies from Korea, thus it is considered as new to that region.

**Distribution:** Europe, Siberia, Mongolia, Sakhalin, Japan, Korea.

***Arge gracilicornis* (KLUG, 1812).** — Pyong-Sung: Bek-sung-li, Za-mo san, 60 km NE from Pyongyan, 1 Aug. 1975 (No. 304), 1 ♂.

Both LKI and FFK list this species under the old synonymous name *A. coeruleascens* GEOFFROY.

**Distribution:** Europe, Caucasus, Siberia, Mongolia, Kamchatka, Sakhalin, Korea, Japan.

***Arge mali* (TAKAHASHI, 1906).** — Prov. Gang-von: district On-dzong, Kum-gang san, near Hotel Go-song, 250 m, 6–8 Aug. 1975 (No. 326), 1 ♀.

LKI mentions it, but with a wrong author's name, FFK gives another wrong author's name: the former gives MATSUMURA, the latter TAKEUCHI.

Apparently, by various authors, MOCSÁRY's *Arge xanthocera* is a synonym. Since we have MOCSÁRY's type in our Museum, I had the opportunity to examine the female type-specimen and compared it against the Korean specimen. The Korean specimen ran down in several keys to *mali*, while MOCSÁRY's *xanthocera* does not seem to be *mali* at all. In fact, it seems to come close to *Arge longicornis* KUZNETZOV-UGAMSKIJ, 1927, and also to *Arge rufocincta* GUSSAKOVSKIJ, 1935. Of course a final decision may be made only after a thorough study of the type-specimens of the latter two species.

**Distribution:** Soviet Union (Ussuri region), Korea, Japan.

***Arge nigripes alpina* (KONOW, 1884).** — Prov. Ryang-gang: Hyesan, Mt Ze-dong, 1150 m, 22 July 1975 (No. 275), 1 ♀.

In a recent paper, ZHELOCHOVTSEV (1976) lists this subspecies as occurring in Europe, Asia Minor, Caucasus, Tian-Shan, Siberia, Kamchatka, Sakhalin and Japan. KONOW's original description (1884) does not give much lead as to the separation of the nominate subspecies from ssp. *alpina*. The only strong feature is "Stirngrube zwischen den Fühlern bei *alpina* flacher und viel breiter", while the same in ssp. *nigripes* is very deep and perhaps not so wide. The subspecies is a new record to Korea.

**Distribution:** Europe, Asia Minor, Caucasus, Tian-Shan, Siberia, Kamchatka, Sakhalin, Korea, Japan.

***Arge pagana pagana* (PANZER, 1798).** — Prov. South Pyongyan: Pyongyan, Botanical garden, 3 Aug. 1975 (No. 311), 1 ♂.

**Distribution:** Europe, Siberia, Kamchatka, Mongolia, China, Korea, Japan.

***Arge* cf. *suspicius* KONOW, 1908.** — Prov. Gang-von: district On-dzong, Kum-gang san, near Hotel Go-song, 250 m, 4–6 Aug. 1975 (No. 320), 1 ♂.

The identification of this male specimen was difficult, since GUSSAKOVSKIJ's (1935) Palaearctic key proved inadequate to definitely run down to the above species. This specimen has an entirely yellow costa, while subcosta is infuscated: dark brown. Owing to lack of comparative material, the specimen is labelled, for the time being, as above.

**Distribution:** Siberia, Mongolia, China (Manchuria), Korea, Japan. (I am not aware of the occurrence of this species in Europe, though FFK makes reference to this effect.)

## Diprionidae

***Mesodiprion biremis* (KONOW, 1899).** — Prov. Gang-von: district On-dzong, Kum-gang san, near Hotel Go-song, 250 m, 4 Aug. 1975 (No. 315), 1 ♀. — Same locality, 5 Aug. 1975 (No. 319), 1 ♂.

In all significant features, the male is identical with the female, though much smaller (the female is 7.8 mm long, the male 6.0 mm). Sexual dimorphism is restricted to a slenderer body and the much longer prolongations of the antennal joints in the male. Number of flagellar joints in the female 18, in the male 16. A short description of the male based mainly on colour follows.

**Male.** — Black. Head black, only palpi dirty yellow, apex of mandibles and ocelli red, eyes silvery white (perhaps owing to alcoholic treatment!). Thorax black, hind corners of pronotum white, this colour extending along

hind margin of pronotum as a very narrow strip up to the point where lateral furrows of the front lobes of mesonotum meet pronotum; tegulae at lateral margin white, rest brown; wing with intercostal cross-vein ill-defined, first cubital cross-vein only partly developed, thus 1st and 2nd cubital cells confluent; legs with coxae dark brown, though apices white, trochanter and trochantellus of all legs white, femora black, but apices marked white, front side of fore tibiae and tarsi very light brown, behind white, mid tibiae and tarsi white, apices of former and last two joints of latter suffused very light brown, hind tibiae white, but apical one-fourth brown, tarsi white, last two joints somewhat brownish, spurs of tibiae light to dark brown, claws with inner tooth also brown. Entire body covered by short silvery hairs.

**Distribution:** China (Hong-Kong), Korea.

### Tenthredinidae

#### SELANDRIINAE

**Aneugmenus maculatus** TAKEUCHI, 1929. — Prov. Pyong-Sung: Bek-sung-li, Za-mo san, 60 km NE from Pyongyang, 1 Aug. 1975 (No. 305), 1 ♀; Prov. Gang-von: district On-dzong, Kum-gang san, near Hotel Go-song, 250 m (No. 315), 1 ♂; 5 Aug. 1975 (No. 319), 1 ♀; 6 Aug. 1975 (No. 322), 1 ♀.

In his paper, TAKEUCHI (1941) question-marked the validity of *A. maculatus* TAKEUCHI. Since four additional individuals of this species had been collected in Korea, I had the opportunity to compare KLUG's *A. coronata* with TAKEUCHI's *maculata*. True enough, the two species come very close to each other, yet a very important cephalic feature readily separates the two. I selected specimens of *coronata* from Europe and the Caucasus and compared them to my *maculatus* specimens from Korea. The first lot, i.e. *coronata*, has a frontal area delimited by blunt keels on either side but open towards the antennae, furthermore, the lateral keels at about the middle are clearly angular. On the other hand, the frontal area in *maculatus* are delimited by evenly arcuate, blunt lateral keels, while towards the antennae the area is closed, very similar to the frontal area of *A. padi* L. Hence *maculatus* is a distinct species. *Aneugmenus maculatus* and *coronata* may be readily distinguished from *padi* by the rather flat clypeus smoothly joining interantennal area without any suture to separate the two; the same in *padi* is wholly different: convex clypeus delimited at hind margin by a distinct transversal furrow from interantennal area.

**Distribution:** Korea, Japan.

### *Caliroa carinata* sp. n.

Female. — Black. Head black, only compound eyes milky white, ocelli and tips of mandibles red, palpi dirty yellow to brown. Scape and pedicel about same length. 3rd antennal joint exactly same length as 4th and 5th combined (ratio of joints 3 : 4 : 5 as 19 : 10 : 9); beginning with 5th, joints gradually shortening and narrowing. Inner orbits subparallel, only very weakly converging towards clypeus. Labrum evenly rounded on frontal margin, with long brown hairs. Clypeus emphatically trapeziform, very narrow at front, latter shallowly, semicircularly emarginate over entire margin leaving one blunt tooth on either side. Clypeus strongly convex, thus posterior margin separated from interantennal area by a deep sulcus terminating on either side



in large, deep anterior tentorial pits. Malar space linear, shorter than half diameter of front ocellus. Interantennal area somewhat elevated, above antennae median fovea wanting, instead a three-pointed star present, whose longitudinally projecting arm cutting deep across front side of frons, i.e. latter open towards antennae. Frons clearly defined by blunt elevations at either side. Supra-antennal pits clearly defined, intact all round, i.e. not confluent with bases of antennae. Postocellar area only weakly swollen, sharply delimited by deep postocellar furrows on both sides, latter two very closely approximating but not reaching hind margin of head. Length and width proportions of postocellar area as 14 : 11 (length measured from centre of two post ocelli in dorsal view). POL : OOL as 13 : 9. Outer orbits coarsely rugose, weakly channelled. Head contracted behind eyes.

Thorax black, only legs partly yellowish white. Pronotum densely punctured, not shining. Mesonotum only sparsely punctate, shining. Frontal lobes of mesonotum with a furrow in about proximal two-thirds, then abruptly ending and continuing in a blunt carina, i.e. posterior one-third of front lobes confluent, elevated as a roof of a house. Lateral lobes of mesonotum convex, separated by deep grooves from frontal lobes. Front margin of scutellum separated from lateral lobes by a short, deep groove ending at either side in an even deeper, punctiform depression, thus about frontal one-quarter on either side of scutellum confluent with surface of lateral lobes. Surface of scutellum shining without visible punctation. Downturned portion of scutellum and post-sclerite of same with some fine punctures. Cenchri small, round, brown, distance between them about twice the length of one. Mesopleuron and mesosternum weakly punctate, in front with an upturned margin, indicating the presence of a prepectus. Fore leg: coxa, trochanters, femur black, except extreme tip of latter, tibia, basitarsus and following two joints yellowish white, apical two joints light brown, claws shining brown, latter simple with a large basal lobe. Mid leg: similarly coloured as fore one, but tibia with a light brown suffusion along apical one-third of inner side. Hind leg: coxa, trochanters, femur entirely black, basal half of tibia white, apical half black (dark brown), basitarsus white except very weak infuscation of apex above, following joints white below, brown above as are also apical two joints. Fore wings uniformly brown, suffused, with a dark brown venation, stigma at bay lighter brown. One small dark brown dot present in middle cell and one in 2nd cubital cell. Hind wings less infuscated, without closed middle cells.

Abdomen black, tergites with densely alutaceous surface sculpture. Sawsheath in lateral view evenly rounded at apex. Hypopygium deeply emarginate on either side of middle. Short dark brown setae at tip of sawsheath in dorsal view showing no characteristic configuration.

Length: 4.5 mm; alar expanse: 9 mm.

Male and host-plant unknown.

Holotype female: "Korea, Prov. South Pyongan Nam-po, No. 273, 19 July 1975 leg. J. PAPP et A. VOJNITS". The female was collected by netting at shrub-level in a *Robinia*—*Castanea* wood, between 11 a.m. and 1.30 p.m.

The new species comes close to the Palaearctic *C. annulipes* (KLUG, 1814), especially as far as the coloration of the legs is concerned. However, it readily differs from the latter species by having a blunt carina in the posterior one-third of the frontal lobes of mesonotum, by its shallower emargination of clypeus (in *annulipes* triangularly excised), by the construction of the postocellar area (in *annulipes* very much swollen), and by its open middle cells in the hind wings (in *annulipes* both middle cells are closed). *Caliroa carinata* sp. n. also differs from *C. staphylea* OKUTANI, 1965, by its semicircularly emarginate front margin (in *staphylea* "with a broad subangular emargination"), by its median fovea: three-pointed star (in *staphylea* "shallow, circular in outline"), by the length and width proportion of its postocellar area 14 : 11 (in *staphylea* "nearly twice as wide as its length"), by its POL : OOL as 13 : 9 (in *staphylea* "12 : 11"), by its proportion of antennal joints 3 : 4 + 5 as 19 : 19 (in *staphylea* 36 : 41), by its much smaller cenchri and also by its two enclosed middle cells in the hind wing (in *staphylea* only one enclosed middle cell).

**Emphytus basalis** (KLUG, 1814). — Prov. Ryang-gang: Chann-Pay plateau, 15 km SSW from Sam-zi-yan on the road between Hyesan and Sam-zi-yan, 1600 m, 23 July 1975 (No. 277), 1 ♀; Chann-Pay plateau, Sam-zi-yan, 1700 m, 24–25 July 1975 (No. 289), 1 ♂; Hyesan, Mt Ze-dong, 1150 m, 26 July 1975 (No. 293), 1 ♀, 1 ♂; River Karim, 10 km NEE from Bochonbo, 1100 m, 27 July 1975 (No. 297), 1 ♂.

**Distribution:** North and Central Europe, Turkey, Siberia, Kamchatka, Mongolia, China, Korea, Sakhalin, Japan, North America.

### *Pseudostromboceros* TAKEUCHI, 1941

The type-species of the genus is *Stromboceros atratus* ENSLIN, 1911, described from Formosa. Owing to the inverted V-shaped prepectal furrow (cf. Fig. 149 in BENSON, 1952), TAKEUCHI (1941) referred this genus to the close alliance of *Selandria* LEACH, 1817. This peculiarly developed prepectal furrow in *Selandria* is quite obvious, since both branches are well discernible, less distinct in *Brachythops* HALIDAY, 1839, at the dorso-lateral branch, and the same is even less distinct in the genus *Pseudostromboceros*; still in the latter two cases a careful study shows that the branches are evidently there. Thus I would consider these three genera to comprise the tribe of Selandriini. On the other hand, the tribe of Aneugmenini has an entirely different prepectus, separated by a simple, one-branched prepectal furrow, it is sharp and extends right to the frontal margin of the mesopleuron, thus cutting off a distinct, more or less triangularly shaped ventro-lateral sclerite. In the case of Selandriini, as it may be readily seen in BENSON's figure, the ventro-lateral furrow stops



short before reaching the frontal margin of mesopleuron, and there makes an even arch and runs towards the dorso-lateral side, thus the furrow never reaches the frontal margin and we cannot speak of a distinct sclerite at all. I would even be inclined to relegate those taxa in Selandriini which have only a ventro-lateral branch not reaching the frontal margin of mesopleuron. So far, I am not aware of the existence of such a taxon.

Obviously, when identifying the Csévharaszt material (ZOMBORI, 1976) I never expected to find an Oriental genus in Hungary, consequently I was thoroughly perplexed by the combination of characteristics the specimens exhibited. For want of a better name, I described the three females as "*Birka perplexa* sp. n.", and made perhaps far reaching conclusions concerning the status of various genera included in the tribe of Aneugmenini.

The elaboration of the material from Korea turned my attention again to the recently described Hungarian species which after a detailed study proved to be *Pseudostromboceros*, a genus new for Europe and for the whole of the Palaearctic Region. The Korean sawfly material also yielded a new *Pseudostromboceros* species, another record for the Palaearctic Region of this genus. The description of the new species follows hereunder.

#### ***Pseudostromboceros frontalis* sp. n.**

Female. — Black. Head black with only palpi brown and ocelli and mandibular apices red. Labrum round on frontal margin. Clypeus weakly emarginate throughout its entire frontal margin, sparsely punctured, shining. Malar space linear, less than half diameter of front ocellus. Antennae short, not longer than head and thorax together, scape robust, longer than pedicel 3rd and 4th joints of about same length, 5th somewhat shorter, from 6th on gradually shortening and narrowing, antennal joints 5—8 with a minute projection below, weakly serrate. Median fovea peculiar: sausage-shaped, supra-antennal pits clearly defined with a small papilla in each, frontal area sharply delimited from rest of head by a more or less hexagonally decurrent sharp keel, from one lateral ocellus right round to the other one, enclosed surface thus barred-shaped and subrugulose as far as sculpture is concerned (under lower magnification, e.g.  $\times 25$ , appearing asperate). Postocellar area defined by two deep but short furrows, not reaching hind margin of head. Occipital carina wanting. Head otherwise with very sparse and weak punctation (rather insertion points of hairs) and with short, erect black hairs.

Thorax black, only tegulae brown and legs partly white. Mesopleuron with its inverted V-shaped prepectal furrow, ventro-laterally clearly, dorso-laterally ill-defined. Front lobes of mesonotum with a very fine, scarcely distinguishable median suture, postsclerite of scutellum separated by a single

line of punctures. Cenchri small, distance between them about twice the diameter of one. Thorax with very weak punctation, shining. Legs black and white: all coxae black, fore and mid trochanters and trochantelli also black, hind ones white, all femora black, only apices white, all tibiae white. But apices with weak brownish infuscation, first two pairs of basitarsi white, rest of joints and entire hind tarsi brownish infuscated, claws with a large inner tooth. Wings brown infuscated at basal portion up to stigma, subsequently greyish infuscated in fore wing, hind wing uniformly brown infuscated, venation and stigma dark brown, in fore wing 1st cubital cross-vein absent, radial cross-vein joining 3rd cubital cell closer to middle of cell than to 3rd cubital cross-vein; in hind wing both middle cells closed, anal cell sessile.

Abdomen black without any appreciable surface sculpture, shining. Sawsheath insignificant, scarcely projecting from under last tergite, apical setae not characteristic: straight, short, pointing outward. Hypopygium normal with a small triangular process in middle.

Length: 6 mm; alar expanse: 12 mm.

Holotype female: "Korea, Prov. Pyong-sung Bek-sung-li, Za-mo san, 60 km NE from Pyongyan No. 304, 1 August 1975 leg. J. PAPP et A. VOJNITS."

Paratypes: "Korea, Prov. South Pyongyan: Lyong-ak San, 14 km W from Pyongyan No. 299, 30 July 1975 leg. J. PAPP et A. VOJNITS", 1 ♀; another specimen from No. 304: data identical with those of holotype, 1 ♀.

Further data are available from PAPP and VOJNITS's (1976) report for No. 299: "Singled material in coniferous-deciduous wood..." "...11—15.30 h, sunny weather with clouds, 32 °C"; and for No. 304: "Singled material in sweet chestnut wood in nature conservancy field." "...after 13 o'clock cloudy weather with sunshine and 28—30 °C."

The new species comes very close to a recently described species from Hungary: *Pseudostromboceros perplexus* (ZOMBORI, 1976) **comb. n.** The differences are given in a concise key prepared for the three species of the genus.

- 1 (2) Body covered with silvery white hairs. Clypeus almost triangularly excised on frontal margin. 3rd antennal joint much longer than 4th. Frontal area shaped like a lyre. Besides legs, labrum entirely, clypeus and pronotum partly, posterior margin of abdominal segments wholly, yellowish white. Large species: 7.5—8.0 mm. Distribution: Oriental Region (Formosa) **atratus** (ENSLIN, 1911) ♀ ♂
- 2 (1) Body covered with short brown hairs. Clypeus evenly and shallowly emarginate over entire frontal margin. 3rd antennal joint scarcely longer than 4th. Frontal area barrel-shaped. Labrum, clypeus, pronotum, abdomen entirely black. Small species: 6—6.5 mm. Distribution: Palearctic Region.
- 3 (4) Front lobes of mesonotum confluent in middle, with only a scarcely discernible, very fine line. Infuscation of fore wings bicolorous: brownish infuscated at basal portion up to height of stigma, thereafter greyish infuscated. Radial cross-vein always closer to middle of 3rd cubital cell than to 3rd cubital cross-vein. Tegulae dark brown to partly yellowish white. Postocellar area delimited by a short, though distinct furrow on both sides. Length: 6 mm. Distribution: Korea **frontalis** sp. n. ♀
- 4 (3) Front lobes of mesonotum clearly separated from each other by a deep, normal median furrow. Infuscation of fore wings unicolorous: light brown throughout. Radial cross-vein always closer to 3rd cubital cross-vein than to middle of 3rd cubital cell. Tegulae always entirely black. Postocellar area marked on both sides by a guttiform pit. Length: 6.5 mm. Distribution: Hungary **perplexus** (ZOMBORI, 1976) ♀



**Taxonus delumbis** KONOW, 1900. — Prov. Ryang-gang: Chann-Pay plateau, 15 km SSW from Sam-zi-yan on the road between Hyesan and Sam-zi-yan, 1600 m, 23 July 1975 (No. 277), 1 ♀.

The only difference seems the white colour of the labrum. KONOW (1900) did not make reference, in his original description, to the colour of the labrum, thus apparently his specimen from Siberia (Irkutsk) had a black labrum. In all other features the Korean specimen well corresponds with the original description, including the very peculiar coloration of tergites 3–5 in the middle: fulvous.

**Distribution:** Siberia, Korea, Japan.

#### BLENNOCAMPINAE

##### *Fenella* WESTWOOD, 1840

The species of this genus was redefined by BENSON in 1952 and treated in detail in 1953. At that time, BENSON distinguished five species, all living in Europe or in the Mediterranean region. TAKEUCHI (1952) included this genus in his key of the Tenthredinidae, but said "Only a single species occurs in Japan, but it is not yet identified". Since then the genus was shown in Central Asia (DOVNAR-ZAPOLSKY, 1969), Mongolia (ZOMBORI, 1972) and East Siberia (VERZHUTSKY, 1974).

The five Korean *Fenella* specimens, all males, proved to represent four species, three of which are new to science. The descriptions of the species follow hereunder.

##### *Fenella continuata* sp. n.

**Male.** — Black. Head black, only labrum and palpi dirty yellow. Clypeus truncate on frontal margin, with some scattered fine punctures. Malar space linear. Frontal area slightly elevated, on either side one narrow furrow present, front ocellus situated in a shallow, lunar depression, below frontal area head flat, farther down continuing in a clearly defined channel petering out at height of imaginary line connecting centres of antennal sockets (Fig. 1). POL : OOL as 14 : 13. Antennae black, 11-jointed, scape and pedicel very similarly built, ratio of 3rd and 4th antennal joints as 1.2 : 1, ultimate joints clearly longer than twice their breadths, all joints covered with long, erect, fuscous hairs. Postocellar area almost quadrate.

Thorax black with scattered pubescence, shining, in front of scutellum a deep pit present. Wings hyaline, without infuscation. Vein *M* strongly bending at its basal one-third, subsequently straight, 1st cubital cross-vein missing, 2nd cubital cross-vein farther away from point of origin of *2mcu* than its own length. Hind wing without an enclosed middle cell. Legs mainly black, basal one-third of fore femur, tibia and tarsus dirty yellow, mid legs

similarly coloured, hind legs with only extreme apex of femur and entire tibia and tarsus dirty yellow, though latter two somewhat infuscated at their apices.

Abdomen dark brown, surface sculpture visibly alutaceous.

Length: 2 mm; alar expanse: 4.5 mm.

Holotype male: "Korea, Prov. Ryang-gang: Chann-Pay plateau, 24 km NW from Sam-zi-yan, road to Mt. Pektusan, 2000 m, No. 281. 24 July 1975 leg. J. PAPP et A. VOJNITS."

Further data: "Netting in more or less devastated clearings of *Larix*—*Betula* forest." "10—13.30 h, sunny weather with cloudy sky, 24—26 °C."

Paratype female: "Tompá erdő 1962. VII. 27 leg. MIHÁLYI". Further data: collected in Hungary in the forest of Tompa.

The new species belongs to the species group of *nigrita*. It stands closest to *F. excavata* sp. n., from which it differs in several characteristics given in a key below.

### *Fenella crenata* sp. n.

Male. — Black. Head black, labrum and palpi piceous. Clypeus truncate on frontal margin, with fine surface sculpture. Malar space about half diameter of front ocellus. Frontal area elevated, smooth, shining, below it surface with a shallow depression, in the middle of latter a longitudinally decurrent deep furrow present, extending to at least imaginary line connecting centres of antennal sockets (Fig. 2). POL : OOL = 21 : 19. Antennae black, 12-jointed, scape and pedicel of similar construction, ratio of 3rd and 4th antennal joints as 1.4 : 1, ultimate joint about twice the length of its breadth, joints relatively short, compressed bilaterally, covered with short, fuscous erect hairs. Post-ocellar area short, about 1.5 times broader than long. Head somewhat contracted behind eyes.

Thorax black, entirely smooth and shining. Scutellum small, much sunken below level of side lobes of mesonotum, at frontal margin a deep pit present. Wings infuscated. Vein *M* bent at about basal one-quarter, rest straight, 1st cubital cross-vein missing, 2nd cubital cross-vein short and closer to point of origin of 2*mcu* than its own length. Hind wing without an enclosed middle cell. Legs black, only extreme apex of femora, entire tibiae of first two pairs, basal portion of tarsal joints dirty yellow, apices of tarsal joints, hind tibiae mostly infuscated with brown.

Abdomen dark brown with very narrow yellowish white bands on posterior margin of segments. Surface with some alutaceous sculpture.

Length: 3 mm; alar expanse: 7 mm.

Holotype male: "Korea, Prov. Ryang-gang: Chann-Pay plateau, 24 km NW from Sam-zi-yan, road to Mt. Pektusan, 2000 m, No. 281. 24 July 1975 leg. J. PAPP et A. VOJNITS."

*Fenella crenata* sp. n. belongs to the species-group of *minuta*. The specific differences are shown in the key given below for the genus.



***Fenella excavata* sp. n.**

Male. — Black. Head entirely black, only hidden labrum and palpi piceous. Clypeus truncate on frontal margin, sparsely punctured, shining. Malar space linear. Frontal area highly elevated, owing to presence of wide and deep grooves on both sides, front ocellus situated in a deep lunar depression, below frontal area head excavated, shape inverted guttiform, lowermost part of excavation abruptly ending and surrounded by an elevation at height of an imaginary line connecting centres of antennal sockets; excavated surface at bottom with a narrow furrow (Fig. 3). POL : OOL as 18 : 19. Antennae black, 12-jointed, scape and pedicel similarly shaped, ratio of 3rd and 4th antennal joints as 1.2 : 1, ultimate joint long, much longer than twice its breadth, all joints covered with erect fuscous hairs. Postocellar area about 1.5 times as broad as long. Head strongly contracted behind eyes.

Thorax black with sparse pubescence, shining. In front of scutellum a deep pit present. Wings somewhat infuscated. Vein *M* strongly bent at basal one-third, then straight, 1st cubital cross-vein missing, 2nd cubital cross-vein short and farther away than its own length from point of origin of *2mcu*. Hind wing without an enclosed middle cell. Legs mostly black, but about apical one-third of fore femur, frontal side of tibia and bases of tarsal joints dirty yellow, hind part of tibia and rest of tarsal joints brown, mid legs similar to fore pair but femora with light yellow only at extreme apex, hind legs with knees, apices of tibiae and tarsal joints dirty yellow.

Abdomen dark brown with narrow yellowish white bands at posterior margin of segments; surface with very weak alutaceous sculpture.

Length: 3.5 mm; alar expanse: 7.0 mm.

Holotype male: "Korea, Prov. Ryang-gang: Chann-Pay plateau, 24 km NW from Sam-zi-yan, road to Mt Pektusan, 2000 m, No. 281. 24 July 1975 leg. J. PAPP et A. VOJNITS".

Paratype male: "Korea, Prov. Ryang-gang: Chann-Pay plateau, Sam-zi-yan, 1700 m, No. 289. 24–25 July 1975 leg. J. PAPP et A. VOJNITS".

Additional data: "Netting in more or less devastated clearings of *Larix*—*Betula* forest." "10–13.30 h, sunny weather with cloudy sky, 24–26 °C".

The new species belongs to the species-group of *nigrita*. Differences are given in the key prepared to the known species of the genus *Fenella*.

***Fenella nigrita* WESTWOOD, 1840 ♂ n.**

The male of this species has not been reported so far. A short description of the male is given, relying rather on features of sexual dimorphism.

Head strongly contracted behind eyes, antennal joints slightly robuster than in female. Abdomen becoming narrower towards posterior end of body. Side lobes of mesonotum with scarcely distinguishable surface sculpture.

In all other characteristics, the male agrees well with the female. Length: 2.5 mm.

The definite feature of identity exists on the surface below the frontal area — apparently the construction of this surface displays some important specific characteristics, as also in *Pseudodineura* — with a broad straight channel decurrent between the interantennal areas, abruptly ending somewhat above the imaginary line connecting the centres of the antennal sockets, where it is clearly surrounded by a blunt keel (Fig. 4). This feature is identical in the female and the male, and does not exist in the other species of this genus.

Material examined: Prov. Ryang-gang: Chann-Pay plateau, Mt Pektusan, Mu-do-bong, 2100—2200 m, 25 July, 1975 (No. 288), 1 ♂.

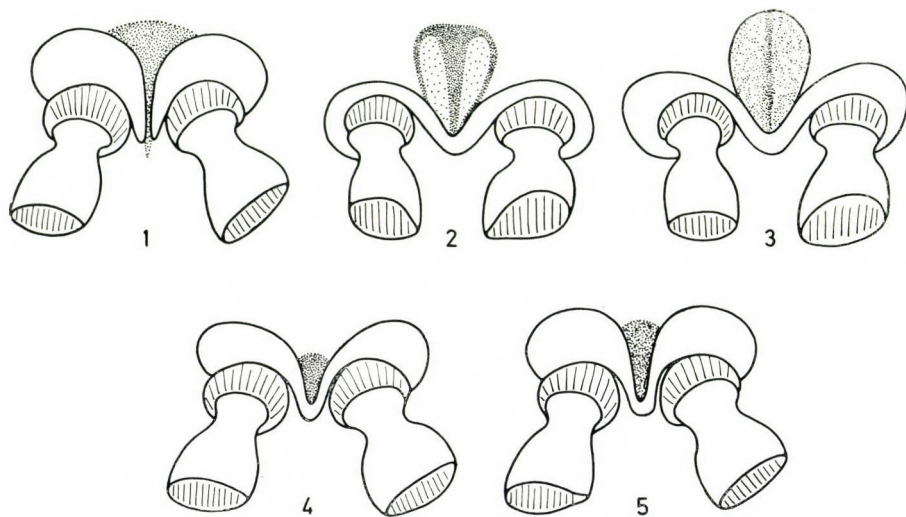
Distribution: Europe, Siberia, Mongolia, Korea, North America.

### Key to the species of *Fenella* Westwood

- 1 (10) Fore wing with second cubital cross-vein (*2rm*) received on medial vein (*M*), farther from second medial cross-vein (*2mcu*) than its own length. Head with hind ocelli closer together, or at most only slightly farther apart, than distance of each from nearest eye margin. Antenna with 11—16 joints (*nigrita*-group).
- 2 (7) Antenna short, its length less than one and a half times the greatest breadth of head; number of joints: 11—12. Basal one-third of *M* evenly bent, never appearing angular.
- 3 (4) Ratio of 3rd and 4th antennal joints as 1.6 : 1. Front ocellus free, not included in a semicircular depression. Triangular area below frontal area with a broad, very characteristic canaliform depression (Fig. 4). Length: 2.5—3.0 mm. Larva mines in *Potentilla reptans*, *P. grandiflora* and in *Agrimonia eupatoria*. Distributed in Europe, Siberia, Mongolia, Korea, North America **nigrita** WESTWOOD, 1840 ♀♂
- 4 (3) Ratio of 3rd and 4th antennal joints as 1.2 : 1. Front ocellus situated in a semicircular (lunar) depression.
- 5 (6) Triangular area below frontal area excavated, inverted guttiform, with a deep, narrow furrow in the middle extending along entire length of depression, down to height of an imaginary line connecting centres of antennal sockets, at lowermost part surrounded by an elevation (Fig. 3). POL : OOL as 18 : 19. Length: 3.5 mm. Larva unknown. Korea **excavata** sp. n. ♂
- 6 (5) Triangular area below frontal area flat, funnel-shaped, supra-antennal tubercle extending downward between antennal sockets, thereby enclosing a clearly defined channel, both petering out at height of an imaginary line connecting centres of antennal sockets, lowermost part not surrounded by an elevation (Fig. 1). POL : OOL as 14 : 13. Length: 2 mm. Larva unknown. Hungary, Korea **continuata** sp. n. ♀♂
- 7 (2) Antenna long, its length at least twice as long as greatest breadth of head, with 13—16 joints. Basal one-third of vein *M* almost angled, though apical two-thirds straight.
- 8 (9) Ratio of 3rd and 4th antennal joints as 1.2 : 1. Length: 3 mm. Larva possibly mining in *Geranium sylvaticum*. Distributed in Northern and subalpine Europe: Scotland, Norway, Sweden and Switzerland; Mongolia **monilicornis** THOMSON, 1871 ♀
- 9 (8) Ratio of 3rd and 4th antennal joints as 1.6 : 1. Length: 3 mm. Larva unknown. Palestine **judaica** (FORSIUS, 1930) ♂
- 10 (1) Fore wing with second cubital cross-vein (*2rm*) received on medial vein (*M*) not farther usually much closer to second medial cross-vein (*2mcu*) than its own length. Head, with hind ocelli much further apart than distance of each from nearest eye margin. Antennae with 12—14 joints (*minuta*-group).
- 11 (12) Antenna long, in female about twice as long as breadth of head. 9th and 10th joints at least one and a half times as long as broad. Length: 3 mm. Larva unknown. Algeria **granulata** BENSON, 1953 ♀
- 12 (11) Antenna short, in female at most one and a half times, in male at most twice, the breadth of head. 9th and 10th joints scarcely one and a half times as long as broad in female, while in male sometimes more than twice as long as broad.



- 13 (14) Clypeus weakly emarginate on frontal margin. Lateral lobes of mesonotum with distinct coriaceous surface sculpture. Triangular area below frontal area with a short, ill-defined furrow (Fig. 5). Length: 3 mm. Larva mining in *Geranium columbinum*, *G. pusillum*, *G. pyrenaicum*. Distributed in Germany, Sweden, Switzerland, Spain, Hungary, Greece, Central Asia **minuta** THOMSON, 1870 ♀♂
- 14 (13) Clypeus truncate on frontal margin. Side lobes of mesonotum quite smooth, shining. Triangular area below frontal area with a long, sharply defined furrow (Fig. 2). Length: 3 mm. Larva unknown. Korea **crenata** sp. n. ♂



Figs. 1—5. Structure of interantennal area, 1 = *Fenella continuata* sp. n., 2 = *F. crenata* sp. n., 3 = *F. excavata* sp. n., 4 = *F. nigrita* Westwood, 5 = *F. minuta* THOMSON

#### TENTHREDININAE

**Macrophya imitator** TAKEUCHI, 1937. — Prov. Ryang-gang: Hyesan, Mt Ze-dong, 1150 m, 22 July 1975 (No. 275), 1 ♀.  
Distribution: Sakhalin, Korea, Japan.

**Macrophya koreana** TAKEUCHI, 1937. — Prov. Ryang-gang: Hyesan, Mt Ze-dong, 1150 m, 26 July 1975 (No. 292), 1 ♀.  
Distribution: Korea.

**Pachyprotasis albicincta** CAMERON, 1881. — Prov. Ryang-gang: Chann-Pay plateau, Sam-zi-yan, 1700 m, 24 July 1975 (No. 282), 2 ♀. It is a new record for Korea.  
Distribution: Himalaya, Korea.

**Tenthredo colon** KLUG, 1814. — Prov. Ryang-gang: Chann-Pay plateau, 15 km SSW from Sam-zi-yan on the road between Hyesan and Sam-zi-yan, 1600 m, 23 July 1975 (No. 277), 1 ♀; 24 km NW from Sam-zi-yan along the road to Mt. Pektusan, 2000 m, 24 July 1975 (No. 280), 1 ♀; Mt Pektusan, Mu-do-bong, 2100—2200 m, 25 July 1975 (No. 287), 1 ♀, 1 ♂. New for Korea.

Distribution: Europe, Siberia, Mongolia, Korea, North America.

**Tenthredo deaurata** ENSLIN, 1912. — Prov. Ryang-gang: Chann-Pay plateau, Sam-zi-yan, 1700 m, 24 July 1975 (No. 283), 1 ♂.

This species was originally described by MOCSÁRY in 1909 as *Tenthredo dealbata* from Eastern Siberia: Raddefka, and from the Ussuri region; but since there has already been such a name by GMELIN, MOCSÁRY's name became a homonym, thus ENSLIN substituted the junior

*dealbata* with *deaurata*. With the types in hand, I had the opportunity to compare the Siberian specimens with the one from Korea. There are only minor differences between the male specimens for the two localities, and perhaps the Korean specimen is somewhat smaller: 11 mm. New for Korea.

Distribution: Siberia, Korea.

***Tenthredo fagi fagi* PANZER, 1798.** — Prov. Ryang-gang: Hyesan, Mt Ze-dong, 1150 m, 22 July 1975 (No. 275), 1 ♀.

LKI brings this species under the subspecific name: "*Tenthredo facigera* KONOW", while FFK mentions it as "*Tenthredo fagi facigera* KONOW". — My Korean specimen represents definitely the nominate subspecies. In any case, the differences between the two taxa are so slight that it is very unlikely that they are distinct at all.

Distribution: Europe, Siberia, Korea.

***Tenthredo fulva adusta* (MOTSCHULSKY, 1866).** — Prov. Ryang-gang: Hyesan, Mt Ze-dong, 1150 m, 22 July 1975 (No. 275), 2 ♀.

Distribution: East Siberia, Kurile Islands, China, Korea, Japan.

***Tenthredo limbata* KLUG, 1814** — = *Tenthredo silensis* O. COSTA, 1859; = *Tenthredo quadridens* STROBL, 1896; = *Tenthredo oraria* ZOMBORI, 1973 **syn. n.**

While arranging the *Tenthredo* material from Korea, I came across again my recently described species known as *oraria* ZOMBORI, 1973. Specimens of *T. limbata* KL. from Siberia made me to examine my species, and I found that my *oraria* is a junior synonym of the former. However, I should like to point out that the feature ENSLIN (1920) uses in his key to Palaearctic *Tenthredo* is rather misleading, since he mentioned a brown fuscous band under the stigma. Specimens from Siberia have a scarcely distinguishable light brown band only (with entirely white background!), in the Mongolian specimen it is perhaps less discernible, while in the Korean specimen the wing is uniformly light brownish infuscate, somewhat darker brown from stigma of fore wing to nearly apex of wing; and it is very difficult to speak about a brownish band under the stigma. Of course, the lateral whitish band on the abdomen is a very good feature after all.

No further specimen of the above species has been collected in Korea, still I thought I should clear up the question of synonymy since I came to this conclusion.

Distribution: Europe, Siberia, Sakhalin, Korea, Japan.

***Tenthredo omissoides* (JAKOVLEV, 1891).** — Prov. Ryang-gang: Chann-Pay plateau-15 km SSW from Sam-zi-yan, on the road between Hyesan and Sam-zi-yan, 1600 m, 23 July 1975 (No. 277), 2 ♀; Sam-zi-yan, 1700 m, 24 July 1975 (No. 282), 1 ♀.

The species is a close ally of *T. vespa* RETZIUS, 1783, rather than of *omissa* (FÖRSTER, 1844). The specimens from Korea slightly differ from those in Siberia. The features are based on colour: pronotum entirely black, light colour yellowish white (not yellow), apex of hind tibia black (not reddish). New for Korea.

Distribution: East Siberia, Korea.

### ***Tenthredo pappi* sp. n.**

Female. — Black, brown, yellowish white. Head large, broader than breadth of thorax. Lower face entirely, inner orbits (except for a short black section), interantennal area, supra-antennal tubercles, surface between tubercles (in the middle with a short brown line), outer orbits half way up, head above over greater part yellowish white. Above ocelli black forming an omega-shaped figure, behind, sharp occipital carina colour black, only part behind postocellar area yellow with a round black spot (Fig. 6). Antennae black, only scape and base of pedicel yellowish white, extreme base and apex of 3rd antennal joint light brown. Clypeus quadrately excised in the middle to at most one-fifth the length of clypeus. Ocellar area elevated, postocellar area



sharply delimited on both sides by deep furrows continuing on occiput to foramen. Head above with weak punctition, strongly shining.

Thorax mostly black, following parts yellowish white: most of pronotum, entire tegulae, hind part of front lobes of mesonotum, a stripe on inner margin and hind part of lateral lobes of mesonotum, entire pyramidal scutellum, postsclerite of latter, metanotum, ventro-lateral two-thirds of mesopleuron,

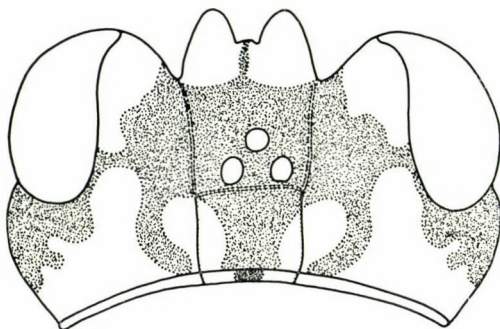


Fig. 6. Colour pattern of the head of *Tenthredo pappi* sp. n. in dorsal view

first two pairs of legs, apex of hind coxa, trochanters, basal three-quarters of femur, tibia and tarsus (mid femur on inner side at one-quarter, hind femur at apical one-quarter black). Mesopleuron with a high pyramidal elevation close to mesosternal border. Mesepimeron black with a deep yellow pit. Wings light brownish infumate with costa and stigma rusty brown, rest of venation black. Mesonotum clearly, mesopleuron and mesosternum weakly, punctured, shining, latter without distinct spiniiform projection at hind margin.

Abdomen: propodeum black with a large triangular yellowish white mark in the middle, tergites 2—5 rusty brown, tergites 6—9 black, though 6th and 7th laterally and 9th medially marked with rusty brown. Sawsheath entirely black.

Length: 12 mm; alar expanse: 28 mm.

Holotype female: "Korea, Prov. Ryang-gang: Hyesan, Mt Ze-dong, 1150 m, No. 275. 22 July 1975 leg. J. PAPP et A. VOJNITS."

The new species runs to *T. ornatula* ENSLIN, 1920, in ENSLIN's (1920) key, but it differs from the latter mainly on a colour basis, as do from one another most of the *Tenthredo* species. Its special mark is found on its head, the black mark being omega-shaped (in *ornatula* U-shaped). Structurally, it differs from latter in its throughout sharply defined occipital carina (in *ornatula* "Scheitel quadratisch, hinten schwach gerandet"), in its weakly though clearly and densely punctured mesonotum (in *ornatula*: "Mesonotum nur sehr schwach und zerstreut punktiert, glänzend").

A similar colour feature on the top of the head (Fig. 6) is found in *T. pseudolivacea omega* TAKEUCHI, 1936, but according to TAKEUCHI's remark: "*T. pseudolivacea* MALAISE is very closely allied to *T. deaurata* ENSLIN (= *dealbata* MOCSÁRY) and the former may possibly be a variety or a synonym of the latter." Since I also identified a specimen of *T. deaurata* from Korea, I am certain that my new species and the latter are not identical. Furthermore, *T. pappi* sp. n. has the medial branch of the character omega extending over the middle of the postocellar area, too.

I am dedicating the new species to my colleague, DR. J. PAPP, a reknown braconologist, the collector of the species.

***Tenthredo tumida*** (MOCSÁRY, 1909). — Prov. Ryang-gang: Hyesan, Mt. Ze-dong, 1150 m, 22 July 1975 (No. 275), 1 ♂.

The species was originally described as *Allantus tumidus*, masculine in gender, thus both LKI and FFK, listing this species as *Tenthredo tumidus*, should be corrected as above, since the genus is feminine in gender.

**Distribution:** East Siberia, Korea.

#### NEMATINAE

***Cladius pectinicornis*** (GEOFFROY, 1785). — Prov. Ryang-gang: Hyesan, Mt. Ze-dong, 1150 m, 26 July 1975 (No. 292), 1 ♀. Apparently a new record for Korea.

**Distribution:** Holarctic.

***Priophorus pallipes*** (LEPELETIER, 1823). — Prov. Gang-von: district On-dzong, Kum-gang san, near Hotel Go-song, 250 m, 6–8 Aug. 1975 (No. 326), 1 ♀. Apparently new to the fauna of Korea.

**Distribution:** Europe, Caucasus, Transcaucasia, Central Asia, Siberia, Korea, Japan.

***Nematus capreae*** (LINNAEUS, 1758). — Prov. Ryang-gang: Chann-Pay plateau, Sam-zi-yan, 1700 m, 24 July 1975 (No. 282), 1 ♀. New for the fauna of Korea.

**Distribution:** Europe, Asia Minor, Siberia, Korea.

***Pachynematus kirbyi*** (DAHLBOM, 1835). — Prov. Ryang-gang: Chann-Pay plateau, 24 km NW from Sam-zi-yan, along the road to Mt. Pektusan, 2000 m, 24 July 1975 (No. 281), 1 ♀.

The Korean specimen is structurally identical with females reared in Hungary. Only some colour differences exist between them. The Korean specimen is on the whole lighter in colour: antenna black above, brown beneath (except 2nd, 3rd and 4th joints); head yellow, only small surface enclosed by three ocelli black; mesopleuron entirely yellow; on the other hand, abdominal tergites 1–6 with dark brown to black transversal bands on frontal margin. Hungarian specimens: antenna entirely black; head more extensively marked with black, this colour wholly enclosing ocelli, extending in front to antennal sockets, along a narrow line, whose upper margin also black; mesopleuron reddish yellow, and at least prepectus black; abdominal tergites 1–2 extensively marked with black, other tergites light coloured. The legs are similarly coloured in both light and dark forms: reddish yellow with extreme bases of femora ventrally black marked. The species has not been reported to occur in Korea, thus it is a new record.

**Distribution:** North and Central Europe, Siberia, Korea, North America.

***Pristiphora melanocarpa*** (HARTIG, 1840). — Prov. Ryang-gang: Chann-Pay plateau, 24 km NW from Sam-zi-yan, along the road to Mt. Pektusan, 2000 m, 24 July 1975 (No. 281), 1 ♂; Sam-zi-yan, 1700 m, 24–25 July 1975 (No. 289), 1 ♀. A new record to the fauna of Korea.

**Distribution:** Europe, Siberia, Korea.

***Pristiphora mollis*** (HARTIG, 1837). — Prov. Ryang-gang: Chann-Pay plateau, Sam-zi-yan, 1700 m, 24 July 1975 (No. 285), 1 ♀. Apparently a new record to the fauna of Korea.

**Distribution:** North and subalpine Eurasia.



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# ACTA ZOOLOGICA

ТОМ XXIV. ВЫП. 1—2

## РЕЗЮМЕ

### ДАННЫЕ О РОДЕ *ARCHEMORUS* (ARANEAE)

П. БАЛОГ (Будапешт)

Автор проводил ревизию видов рода *Archemorus*, опираясь в первую очередь на богатый материал венгерских научных экспедиций по изучению зоологии почвы, но используя также и коллекции зарубежных музеев. Дается полная редескрипция пяти видов из известных до сих пор 8 видов и — кроме того — описание 10 видов, оказавшихся новыми для науки. На основе до сих пор неприменявшихся морфологических признаков составлен новый ключ для идентификации видов рода *Archemorus*.

### ДАННЫЕ О ЕВРОПЕЙСКИХ ВИДАХ РОДА *CHLOROPS* (DIPTERA: CHLOROPIDAE)

А. ДЕЛИ-ДРАШКОВИЧ (Будапешт)

В работе дается описание двух новых видов рода *Chlorops*. *Ch. babosae* sp. n., *Ch. signata* sp. n.), обнаруженных в Венгрии, и ключ для идентификации известных до сих пор 47 европейских видов рода *Chlorops*. Большинство 56 рисунков изображает виды, о которых еще не было опубликовано иллюстраций, в значительной мере способствуя осознанию видов рода *Chlorops*.

### ВИДЫ РОДА *GEOMETRIDAE* ИЗ ТАНЗАНИИ (LEPIDOPTERA)

Д. С. ФЛЕТХЕР (Лондон)

Работа большей частью основывается на материале, собранном др.-ом Й. Суньоги в окрестности горы Меру, но наряду с этим она охватывает и данные четырех менее значительных мест собирания, и данные коллекции *Geometridae*, храняемой в Британском Музее. Весь материал — около 2500 экземпляров — представляет 238 видов, из 22 вида которых являются новыми для науки, а 80 видов оказались новыми в фауне Танзании. Особое внимание заслуживают превосходные фотоснимки препаратов половых органов этих насекомых.

### НОВЫЕ ТАКСОНЫ *SCHIZOGLYPHIDAE* FAM. NOV., А ТАКЖЕ *ACARIDAE* И *ANOETIDAE* (ACARI: ACARIDA)

Ш. МАХУНКА (Будапешт)

Автор исследовал гипопусов, относящихся к отряду *Acarida*, жувающих на насекомых, преимущественно на жуках. В работе дается описание всего 15 видов, обнаруженных в Венгрии, на территории Национального Парка Хортобать, в США, в Кубе, в Папуасской области, по большей частью в Новой Гвинее и в Вьетнаме. Для 4 видов оказалось необходимым выдвинуть новый род (*Hortacarus simplisetosus* gen. n., sp. n., *Ameranoetus ide*



gen. n., sp. n., *Schizoglyphus biroi* gen. n., sp. n., *Pteranoetus kaszabi* gen. n., sp. n.). Одного вида пришлось обособить из семейства Acaridae (Schizoglyphidae fam. n.) Наряду с этим дается и описание 11 дальнейших новых видов, отчасти из семейства Acaridae и отчасти из семейства Anotoidae.

### НАЕЗДНИКИ-БРАКОНИДЫ (HYMENOPTERA : BRACONIDAE) ИЗ КОРЕИ III

Й. ПАПП (Будапешт)

В работе перечисляются 12 видов Опиінае (Braconidae) из Северной Кореи, из которых 5 видов оказались новыми для науки: *Diachasma disputabilis* sp. n. ♀, *Opius (Grimnirus) fraudatus* sp. n. ♀♂, *O. (Nosopoea) ostentatus* sp. n. ♀♂, *O. (Apodesmia) porrectus* sp. n. ♂, *O. (Utetes) valens* sp. n. ♀♂. Род *Bitomus* SZÉRLIGETI, 1910 перемещается из подсемейства Cheloninae в подсемейство Опиінае, так же название этого рода является старшим синонимом рода *Coleopius* FISCHER, 1964.

### НОВЫЕ ВИДЫ РОДА SPHAEROCERIDAE (DIPTERA) И ИХ ДАННЫЕ ИЗ АФГАНИСТАНА

Л. ПАПП (Будапешт)

Сообщаются данные рода Sphaeroceridae из материала, собранного в ходе экспедиции автора в Афганистане по сбору насекомых в 1974 г. Было найдено всего 57 видов, среди которых 9 видов оказались новыми для науки [3 видов *Limosina*, 6 видов *Leptocera (Rachispoda)*], а дальнейших 33 вида являются новыми в Фауне Афганистана. Автор считает необходимым провести ревизию морфологии половых органов мужских экземпляров видов Sphaeroceridae, и устанавливает, что хотя фауна Sphaeroceridae Афганистана устроилась этим материалом, все еще можно ожидать обнаружение многих дальнейших новых видов.

### ВИДЫ РОДА VITREA (GASTROPODA : ZONITIDAE) В ФАУНЕ ОСТРОВОВ ЭГЕЙСКОГО МОРЯ

Л. ПИНТЕР (Будапешт)

В работе дается описание 3 новых видов рода, собранных на островах Эгейского моря: *Vitrea pageti* sp. n. (остров Родос), *V. sossellai* sp. n. (остров Сими), *V. storchi* sp. n. (остров Хиос). До сих пор виды этого рода были обнаружены в фауне 12 островов Эгейского моря. Из найденных 9 видов 7 являются эндемическими. Автором подытоживаются все достигаемые известные данные о видах этого рода.

### РЕЗУЛЬТАТЫ НАУЧНОЙ ЭКСПЕДИЦИИ ДР-А З. КАСАБ ПО ИЗУЧЕНИЮ ФАУНЫ В МОНГОЛИЮ 419. ТРИБ GNORIMOSCHEMINI (ДОПОЛНЕНИЕ) (LEPIDOPTERA)

Д. ПОВОЛЬНИ (Брно)

Из материала, собранного в ходе научной экспедиции др-а З. Касаб, обсуждаются 22 экземпляра монгольских видов рода Gnorimoschemini. Даже в этом небольшом материале было обнаружено 3 новых для науки вида. В связи с отдельными видами приводятся ценные данные о зоогеографии и о биотопе, а также примечания к хорологии.

## СИСТЕМАТИЧЕСКИЕ И ФАУНИСТИЧЕСКИЕ ИССЛЕДОВАНИЯ НА МОНГОЛЬСКИХ ВИДАХ PLATYSTOMATIDAE (DIPTERA)

А. ШООШ (Будапешт)

Из материала, собранного в ходе научной экспедиции д-ра З. Касаб в Монголии, сообщаются данные о видах Platystomatidae. В коллекции было обнаружено всего 11 видов, относящихся к 3 родам, 1 из которых (*Steyskaliella* gen. n.) и 6 видов (*Platystoma kaszabi* sp. n., *P. altaicum* sp. n., *P. mongolicum* sp. n., *P. mendax* sp. n., *P. centralasiaticum* sp. n., *Steyskaliella tuberculifrons* sp. n. оказались новыми для науки. Описанные уже раньше 5 видов также являются новыми для фауны Монголии.

## ИССЛЕДОВАНИЯ РОДОВЫХ И СВЕРХРОДОВЫХ ТАКСОНОВ СЕМЕЙСТВА LABIDURIDAE (DERMAPTERA)

Х. ШТЕЙНМАНН (Будапешт)

Работа содержит ревизию родовых и сверхродовых таксонов семейства Labiduridae на основе сравнительного исследования внешних морфологических признаков и полового аппарата. Сообщается новый ключ для идентификации родов, в котором последовательно применяется вышеуказанный признак.

## ТРИ НОВЫХ ВИДА ЛИСТОВЫХ ТЛЕЙ ИЗ ВЕНГРИИ, ЖИВУЩИХ НА ВИДАХ РОДА ARTEMISIA (HOMOPTERA : ARHIDOIDEA)

Х. СЕЛЕГНЕВИЦ (Варшава)

В работе сообщается описание трех новых видов растительных тлей, именно: *Absinthaphis hortobagyi* sp. n., *A. pannonica* sp. n., *Macrosiphoniella szalaymarzsoi* sp. n. Все три новых вида паразитируют на видах рода *Artemisia*. Сообщается также ключ для идентификации бескрылых *virgo* рода *Absinthaphis*.

## ЧЕТЫРЕ НОВЫХ ВИДА СЕМЕЙСТВА EULOPHIDAE ИЗ ВЕНГРИИ (HYMENOPTERA : CHALCIDOIDEA)

Г. СЕЛЕНЬИ (Будапешт)

Из материала сборов, проводившихся на территории Национального Парка Хортобадь, дается описание четырех новых видов из семейства Eulophidae *Diglyphus propodealis* sp. n., *Eugerium orbatum* sp. n., *Entedon tibialis* sp. n., *Omphale brevivuccata* sp. n.

## ВИДЫ РОДА EUPITHECINI ИЗ КОРЕИ И КИТАЯ (LEPIDOPTERA : GEOMETRIDAE)

А. М. ВОЙНИЧ (Будапешт) и Э. ЛЕВЕР (Льбёж)

В материале, собранного в ходе научных экспедиций Венгерского Музея Естествознания в Корею, было обнаружено 11 видов рода Eupithecini. Два вида оказались новыми для науки (*Eupithecia koreica* sp. n., *E. hundamoi* sp. n.), а остальных 9 видов также являются новыми в фауне Кореи.

При обработке богатой китайской коллекции, происходящей по большей части из сборов д-ра Хэне, обсуждаются виды, хаактеризуемые на основе внешних морфологических признаков как «группа *Eupithecia recens*». Кроме крупных серий *E. recens* Dietze было



обнаружено 6 новых для науки видов, а именно: *Eupithecia repentina* sp. n., *E. vivida* sp. n., *E. irreperita* sp. n., *E. eximia* sp. n., *E. extrinseca* sp. n., *E. fatigata* sp. n. Наряду с иллюстрацией половых органов новых таксонов, изображаются и половые органы до сих пор неизвестного пола уже раньше описанных видов, а также и опубликованные раньше, но неправильно изображенные половые органы.

#### НОВЫЕ НАСТОЯЩИЕ ПИЛИЛЬЩИКИ ИЗ КОРЕИ (HYMENOPTERA : SYMPHYTA)

Л. ЗОМБОРИ (Будапешт)

Автором была проведена обработка коллекции настоящих пилильщиков из Кореи, собранных в 1975 г. исследователями Будапештского Музея Естествознания. Отдельные виды сообщаются в систематическом порядке, и среди них описываются шесть новых видов: *Pseudostromboceros frontalis* sp. n., *Caliroa carinata* sp. n., *Fenella continuata* sp. n., *F. crenata* sp. n., *F. excavata* sp. n., *Tenthredo pappi* sp. n. Кроме того дается также описание до сих пор неизвестных самцов следующих двух видов: *Nesodipriom biremis* knw. ♂ n., *Fenella nigrita* Westw. ♂ n. и ключи для определения видов рода *Pseudostromboceros* TAKEUCHI и рода *Fenella* WESTWOOD.

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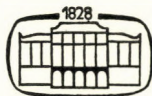
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# NEW DATA TO THE KNOWLEDGE OF THE ORIBATID FAUNA OF THE NEOGEA (ACARI). III\*

By

J. BALOGH and S. MAHUNKA

(Received 16 August, 1977)

A study of the Oribatid material collected by the Hungarian soil zoological expeditions and other collectors in divers faunal districts of the Neogea. Fifty species are recorded mostly from Brazil and the Guaran region, with detailed locality data; 21 new species and 2 new genera (*Phylloribatula* gen. n. and *Trixylobates* gen. n.) are described; *Teratoppia pluripectinata* nom. n. is given for *Teratoppia pectinata* BAL. et MAH., 1969.

In the two preceding papers of the series (BALOGH and MAHUNKA, 1977a, b), we have begun the elaboration, partly with a view for a later comprehensive faunal work, of the rich South American Oribatid material preserved in the Collection of Arachnoidea, Zoological Department of the Hungarian Natural History Museum. The majority of the 50 species herein studied have been collected by the Hungarian soil zoological expeditions (1965—66, 1966, 1967), a smaller part by the collecting activity of K. LENKO, São Paulo.

## LIST OF THE SPECIES STUDIED

- |   |   |
|---|---|
| <b>Phthiracaridae</b> PERTY, 1841                   | <i>Schalleria ramosa</i> BAL. et MAH., 1969                 |
| <i>Steganacarus galeatus</i> sp. n.                 | Locality: Brb 108—113.                                      |
| <i>Steganacarus ephippiger</i> sp. n.               | <b>Staurobatidae</b> GRANDJEAN, 1966                        |
| <b>Xenolohmanniidae</b> BAL. et MAH., 1969          | <i>Staurobates schusteri cordobensis</i> BAL. et MAH., 1968 |
| <i>Xenolohmannia capillata</i> sp. n.               | Locality: No. 317—1.  |
| <b>Plateremacidae</b> TRÄGARDH, 1931                | <b>Metrioppiidae</b> BALOGH, 1943                           |
| <i>Plateremaeus berlesei</i> sp. n.                 | <i>Ceratorchestes setosus</i> BAL. et MAH., 1969            |
| <i>Plateremaeus costulatus</i> sp. n.               | Locality: Brb 17—21.  |
| <b>Microtegeidae</b> BALOGH, 1972                   | <b>Carabodidae</b> C. L. KOCH, 1837                         |
| <i>Microtegeus quadrisetosa</i> BAL. et MAH., 1977  | <i>Carabodes irmayi</i> BAL. et MAH., 1969                  |
| Locality: Brb 114—120.                              | Locality: Brb 48—52.  |
| <b>Charassobatidae</b> GRANDJEAN, 1958              | <i>Carabodes schwartzi</i> BAL. et MAH., 1969               |
| <i>Charassobates ornatus</i> BAL. et MAH., 1969     | Locality: Brb 125—129.                                      |
| Localities: Brb 125—129, Brb 48—52.                 | <i>Spathulocephus amazonicus</i> BAL. et MAH., 1969         |
| <i>Charassobates simplex</i> BAL. et MAH., 1969     | Locality: Brb 138—142.                                      |
| Locality: Brb 138—142.                              | <b>Otocephidae</b> BALOGH, 1961                             |
| <b>Microzetidae</b> GRANDJEAN, 1936                 | <i>Pseudotocephus septemtuberculatus</i> sp. n.             |
| <i>Austrozetes bolivianus</i> BAL. et MAH., 1969    | <b>Dampfiellidae</b> BALOGH, 1961                           |
| Locality: No. 371.                                  | <i>Beckiella bucephala</i> sp. n.                           |
| <i>Licnozetes multiareolatus</i> BAL. et MAH., 1977 | <i>Beckiella foveolata</i> BAL. et MAH., 1969               |
| Locality: Brb 125—129.                              | Localities: Brb 125—129; Brb 138—142.                       |
| <i>Licnozetes flabellatus</i> BAL. et MAH., 1969    | <b>Oppiidae</b> GRANDJEAN, 1954                             |
| Locality: Brb 3—6.                                  |   |

\* The Zoological Results of the Hungarian Soil Zoological Expeditions to South America. No. 55.



- Oppiella transitoria* sp. n.  
*Riopppia nodosa* BAL. et MAH., 1977  
 Localities: Brb 114—120; Brb 156—161.  
*Teratoppia brevipectinata* sp. n.  
*Teratoppia reducta* BAL. et MAH., 1969  
 Localities: Brb 3—6; Brb 17—21; Brb 74—76; Brb 125—129.  
*Teratoppia pluripectinata* **nom. n.**  
 Localities: Brb 3—6; Brb 76—85; Brb 125—129; Brb 138—142.  
**Sternoppiidae** BAL. et MAH., 1969  
*Sternoppia reticulata* BAL. et MAH., 1969  
 Locality: Brb 125—129.  
**Rhynchoribatidae** BALOGH, 1961  
*Rhynchoribates dilatatus* BAL. et MAH., 1969  
 Locality: Brb 138—142  
**Arceremacidae** BALOGH, 1972  
*Tecteremaeus anoporosus* BAL. et MAH., 1969  
 Locality: Brb 125—129.  
**Anderemacidae** BALOGH, 1972  
*Carabodoides longicarinatus* sp. n.  
**Cymbaeremacidae** SELLNICK, 1928  
*Scapheremaeus subglaber* sp. n.  
**Oripodidae** JACOT, 1925  
*Benoibates amazonicus* BAL. et MAH., 1969  
 Localities: No. 380—1; Brb 23—32; Brb 125—129.  
*Benoibates bolivianus* BAL. et MAH., 1969  
 Localities: No. 380—1; Brb 17—21; Brb 76—85.  
*Oripoda lenkoi* sp. n.  
**Oribatulidae** THOR, 1929
- Phylloribatula pulchella* gen. n., sp. n.  
**Haplozetidae** GRANDJEAN, 1936  
*Rostrozetes carinatus* BAL. et MAH., 1969  
 Locality: Brb 48—52.  
*Rostrozetes geminisetosus* sp. n.  
*Rostrozetes monstruosus* BAL. et MAH., 1969  
 Locality: Brb 138—142.  
*Rostrozetes pinguis* sp. n.  
*Rostrozetes rimachensis* BECK, 1965  
 Locality: Brb 138—142.  
*Trixylobates bidactylus* gen. n., sp. n.  
**Nasobatidae** BALOGH, 1972  
*Nasobates mirabilis* BAL. et MAH., 1969  
 Localities: Brb 63—65; Brb 76—85.  
**Ceratozetidae** JACOT, 1925  
*Uracrobates incertus* BAL. et MAH., 1969  
 Localities: Brb 48—52; Brb 133—137.  
*Uracrobates setiger* sp. n.  
**Oribatellidae** JACOT, 1925  
*Lamellobates botari* BAL. et MAH., 1977  
 Locality: Brb 108—113.  
*Plakoribates neotropicus* sp. n.  
**Epactozetidae** GRANDJEAN, 1930  
*Truncozetes mucronatus* BAL. et MAH., 1969  
 Localities: Brb 3—6; Brb 133—137.  
**Parakalummidae** GRANDJEAN, 1936  
*Parakalumma foveolata* BAL. et MAH., 1969  
 Localities: Brb 3—6; Brb 17—21.  
**Galumnidae** JACOT, 1925  
*Allogalumna globulifera* sp. n.  
*Pergalumna complicata* sp. n.  
*Pilizetes neotropicus* sp. n.

In the following, we propose to discuss only the new ones of the species listed above, together with some other species whose morphological picture can now be given in finer detail. The locality data of the preceding list and of the following treatment appear only as the reference numbers of our diaries; for the sake of saving place, the detailed data are comprehensively given below.

- No. 175\*: Chile, Misituni, 25. Nov. 1965, leg. I. LOKSA. — Berlese samples from 12 points in cross-section of small valley running at right angles to Rio Lauca.  
 No. 317—1: Argentina, Fanti, Sierra de Córdoba, 11. Jan. 1966, leg. I. LOKSA. — Berlese samples from rocks, facing E: soil with plant-roots filling up rockleft.  
 No. 371: Brazil, Rio de Janeiro, Botanical Garden, 12. Jan. 1967. — Berlese sample from thin litter on sandy soil of original forest standing on upper declivity of garden (sample extracted in Budapest).  
 No. 380—1: Bolivia, Guayaramerin, about 10 S of town, on the road to Riberaltá, 20.-Nov. 1966. — Berlese samples from closed virgin forest. Upper rizon of litter near edge of forest, but from closed site.  
 No. P-39: Paraguay, Asunción, Botanical Garden, 2. Jan. 1966, leg. I. LOKSA. — Berlese samples from jungle of Botanical Garden: 1—2 litters scraped from foot of tree inside forest.  
 Brb 3—6: Brasil, Fazenda Aqua Azul, 2. Sept. 1967, leg. J. BALOGH. — Shores of the stream Bananal, about 1—2 m above water level, wet litter.  
 Brb 7—11: Brasil, Fazenda Aqua Azul, 2. Sept. 1967, leg. J. BALOGH. — Lower, rooty humus layer on shore of the stream Bananal.

\* See ANDRÁSSY, I., BALOGH, J., LOKSA, I., MAHUNKA, S., and ZICSI, A., 1966; as well as: BALOGH, J., MAHUNKA, S., ZICSI, A., 1967.

- Brb 17—21: Brasil, Fazenda Aqua Azul, 4. Sept. 1967, leg. J. BALOGH. — On shore of the stream Bananal, deeper litter (still dry!) from base of fallen trunks and holes in ground.
- Brb 23—32: Brasil, Fazenda Aqua Azul, 4. Sept. 1967, leg. J. BALOGH. — Shore of the stream Bananal, decaying litter immediately on hard soil (bone dry yet decaying!).
- Brb 48—52: Brasil, Estreito, 9. Sept. 1967, leg. J. BALOGH. — In forest, rooty humus layer below litter.
- Brb 63—64: Brasil, Estreito, Brejo creek, 9. Sept. 1967, leg. J. BALOGH. — Frass and excrement dribbling from insect galleries in base of dead tree on shore of creek.
- Brb 66—70: Brasil, Estreito, 9. Sept. 1967, leg. J. BALOGH. — Cohering humid litter in typical jungle.
- Brb 74—75: Brasil, Estreito, 9. Sept. 1967, leg. J. BALOGH. — Sifted in forest, partly from completely fallen litter of leguminous tree.
- Brb 76—85: Brasil, Estreito, 12. Sept. 1967, leg. J. BALOGH. — Hard, adhering litter of typical, rather dry forest: typical litter of the average thin and dry jungle.
- Brb 108—113: Brasil, Belém, Incourassi, 18. Sept. 1967, leg. J. BALOGH. — Undisturbed virgin forest near river but above flood level: decaying, cohering litter.
- Brb 114—120: Brasil Belém, Incourassi, 18. Sept. 1967, leg. J. BALOGH. — Lower, rather thick and richly rooty layer of preceding one (about 5—7 cm).
- Brb 125—129: Brasil, Manaus, 20. Sept. 1967, leg. J. BALOGH. — Humid yet wholly disintegrating litter, rich in roots, locally accumulated on steep decline.
- Brb 133—137: Brasil, Manaus, 20. Sept. 1967, leg. J. BALOGH. — Some distance away from former, a typical Varsea forest on an island: rooty, black, grainy humus.
- Brb 138—142: Brasil, Manaus, INPA forest reservation, 21. Sept. 1967, leg. J. BALOGH. — Thin, wet litter; forest very dark, ground water level very high.
- Brb 156—161: Brasil, Campinas, 26. Sept. 1967, leg. J. BALOGH. — Americana, rooty litter of a small forest along steep banks of a small stream.
- L-29: Brasil, Barueri, 25. July, 1971, leg. K. LENKO. — From nests of *Camponotus rufipes*.
- L-418: Brasil, Barueri, 15. August. 1971, leg. K. LENKO. — Secondary forest, humus.

### *Steganacarus ephippiger* sp. n. (Figs. 1A—E)

**Measurements.** Length of aspis: 131—152  $\mu$ , length of notogaster: 271—369  $\mu$ , height of notogaster: 164—213  $\mu$ .

**Aspis.** Laterally wide, steeply declivous towards rostrum, lateral rim short, narrow. Surface with long carinae. Sensillus long, ensiform, with a thin membrane. Prodorsal hairs short, with no striking differences in length or shape.

**Notogaster.** Surface with alternating tubercles, emergent and impressed points; anterior part of notogaster projecting above aspis. End of body with three protuberances, surface dorsally with two parallel ridges.

**Anogenital region.** Anal plate with longitudinal ridge, surface with small foveolae. Anal, adanal, genital hairs minute.

**Material examined.** Holotype (317-HO-77): Brb 138—142; paratypes: 5 ex. (317-PO-77): HNHM,\* 1 ex. MHNG,\*\* all collected at the same locality as the holotype.

**Remarks.** There is only one of the known *Steganacarus* EWING, 1917, species which has short and setiform adanal hairs and with some of its notogastral setae arising on tubercles: *S. multituberculatus* BALOGH et MAHUNKA, 1966 (South Africa). The new species considerably differs from it by the shape of its notogastral setae, of the prodorsal crista, and of the notogastral appendage.

\* Deposited in the Hungarian Natural History Museum, Budapest.

\*\* Deposited in the Museum d'Histoire Naturelle, Genève.



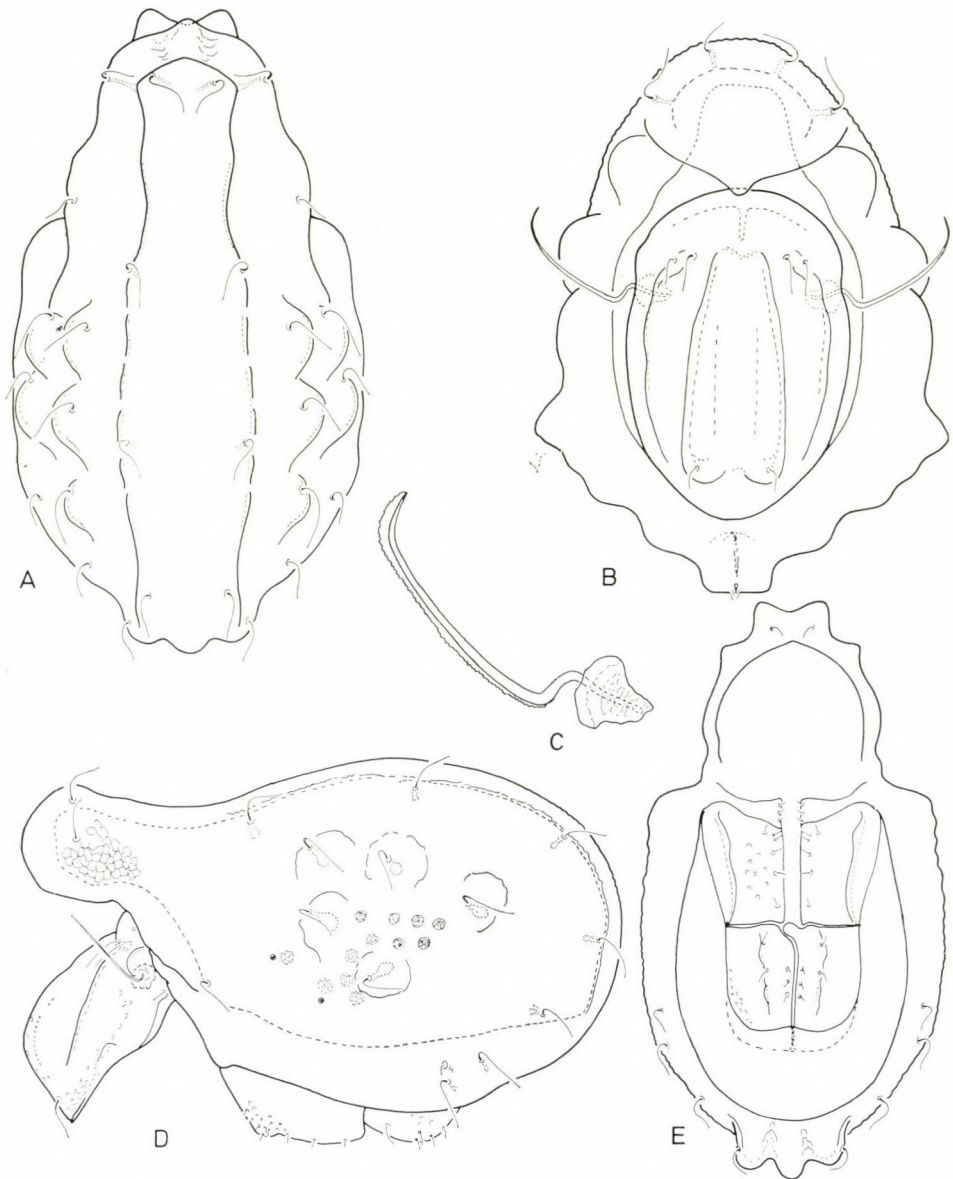


Fig. 1. *Steganacarus ephippiger* sp. n. A = notogaster superiorly, B = aspis and body frontally, C = sensillus, D = lateral view, E = ventral side

***Steganacarus galeatus* sp. n. (Figs. 2A—D)**

**Measurements.** Length of aspis:  $189\ \mu$ , length of notogaster:  $426\ \mu$ , height of notogaster:  $250\ \mu$ .

**Aspis.** Basal part with some longitudinal laths, anteriorly with arcuate laths directed intero-exteriorad. Lamellar and interlamellar hairs short and simple, rostral hair phylliform and longer than the others. Sensillus thin, setiform.

**Notogaster.** Surface ornamented with large foveolae. Anterior part elongated, projecting far anteriorad above aspis, emitting hairs  $c_1$  and  $c_2$ . All notogastral hairs widened, phylliform.

**Anogenital region.** Anal plate with a longitudinal ridge; anal hairs and hair  $ad_1$  minute, simple, situated at inner rim; hairs  $ad_2$  and  $ad_3$  phylliform. Genital hairs also minute.

**Material examined.** Holotype (318-HO-77); Brb 138—142.

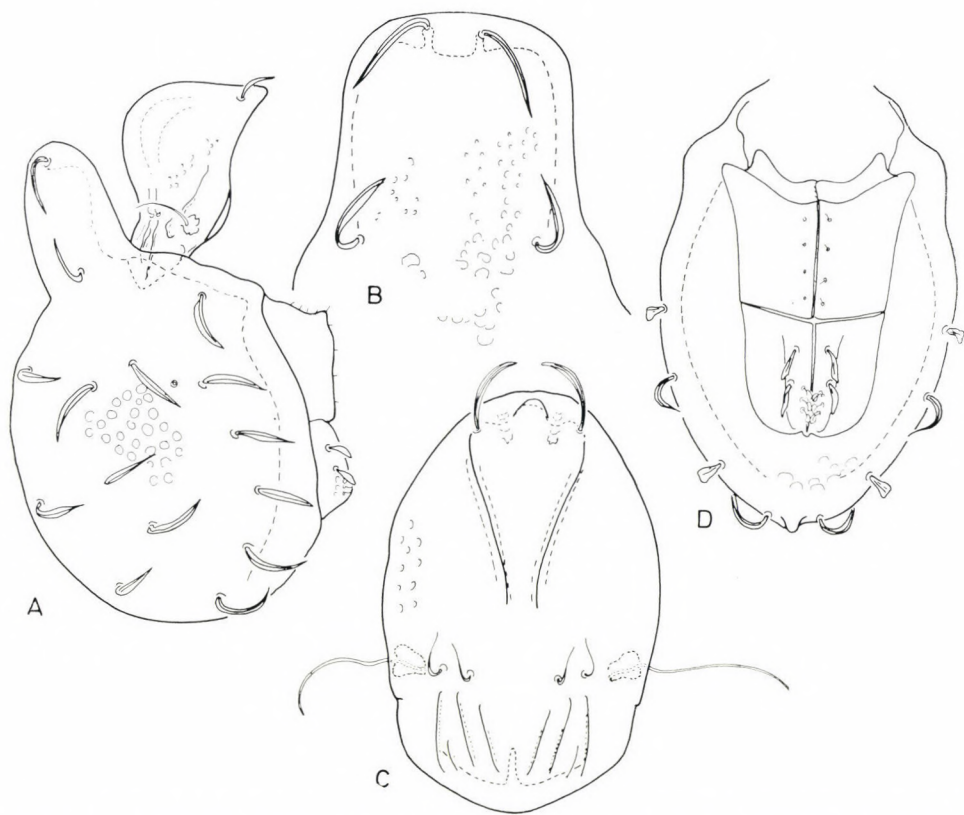


Fig. 2. *Steganacarus galeatus* sp. n. A = lateral view, B = anterior part of notogaster superiorly, C = aspis in superior view, D = ventral side



**Remarks.** The new species belongs in the alliance of *Steganacarus cucullatus* (EWING, 1909), related to *S. subsellatus* (BALOGH et MAHUNKA, 1977), but the shape of the sensillus, the form of the prodorsal crista, etc. distinguish it sufficiently. The sensillus of *S. subsellatus* is slightly fusiform, that of *galeatus* setiform, the prodorsum of *subsellatus* in a lateral view angulate, that of *galeatus* semicircular.

***Xenolohmannia capillata* sp. n. (Figs. 3A—C)**

**Measurements.** Length: 680—696  $\mu$ , width: 429—440  $\mu$ .

**Prodorsum.** Rostrum rounded, rostral hair arising far from its apex. All prodorsally originating hairs thin, long, filiform. Sensillus short, with 9—10 also short lateral branches.

**Notogaster.** Surface punctate. Fossae vitiformes hardly discernible. Subneotrichy, setal rows composed of 4 rows each. Setae thin, hardly ciliate, some short ( $c_{1-3}$ ,  $e_{1-3}$ ), all other ones long, filiform.

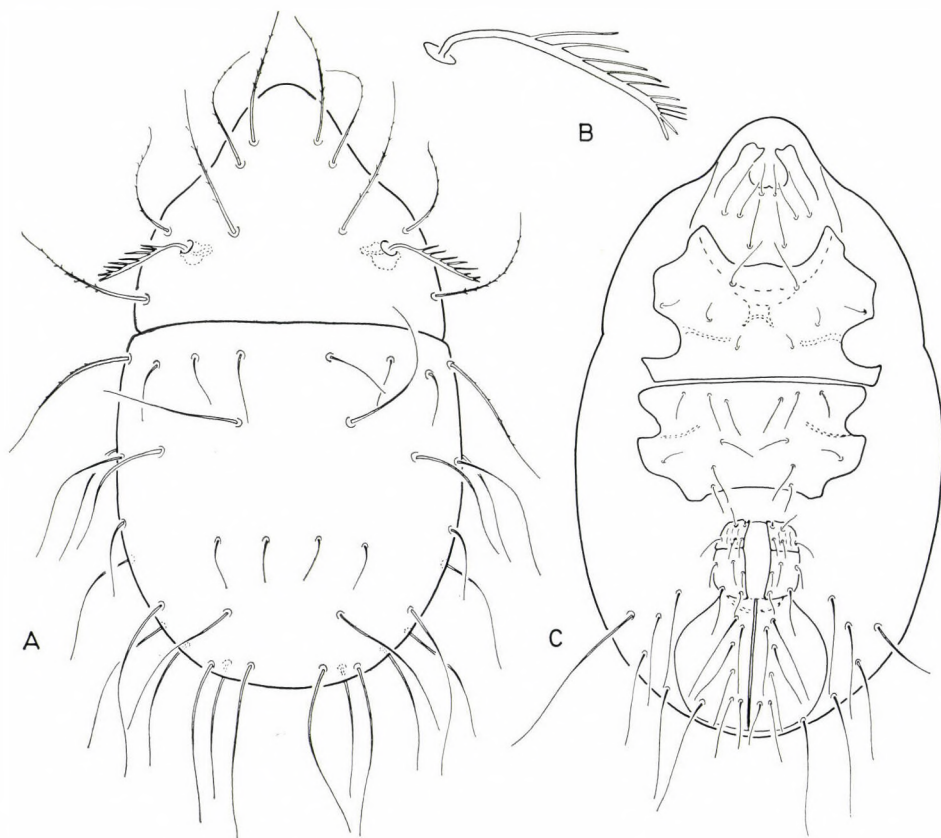


Fig. 3. *Xenolohmannia capillata* sp. n. A = dorsal side, B = sensillus, C = ventral side

**Anogenital region.** Genital plate divided by a transverse line; plate bearing 10 pairs of simple hairs of diverse lengths. Anal plates extraordinarily wide, their combined width equalling their length. Anal and adanal plates not discrete, hence chaetotaxy formula: 6—0, but 2 standing nearer to inner margin than the rest.

**Material examined.** Holotype (319-HO-77): Brb 138—142; paratypes: 2 ex. (319-PO-77): HNHM, 1 ex. MHNG, both collected with the holotype.

**Remarks.** The new species can be sharply distinguished by the length of the notogastral setae from the single known species of the genus.

***Plateremaeus berlesei* sp. n. (Figs. 4A—B)**

**Measurements.** Length: 632—689  $\mu$ , width: 462—486  $\mu$ .

**Prodorsum.** Prodorsal chitinous laths present only in rostral and marginal regions. Rostral and lamellar hairs arising very near each other; in a superior view almost covering each other. Interlamellar hair a minute spine, exobothridial hair long, thin, straight. Sensillus directed latero-posteriorad.

**Notogaster.** Hairs *ta* and *te* long, originating immediately near dorsosejugal suture. Posterior quarter of notogaster with 3 pairs of long, arcuate, weakly ciliate setae.

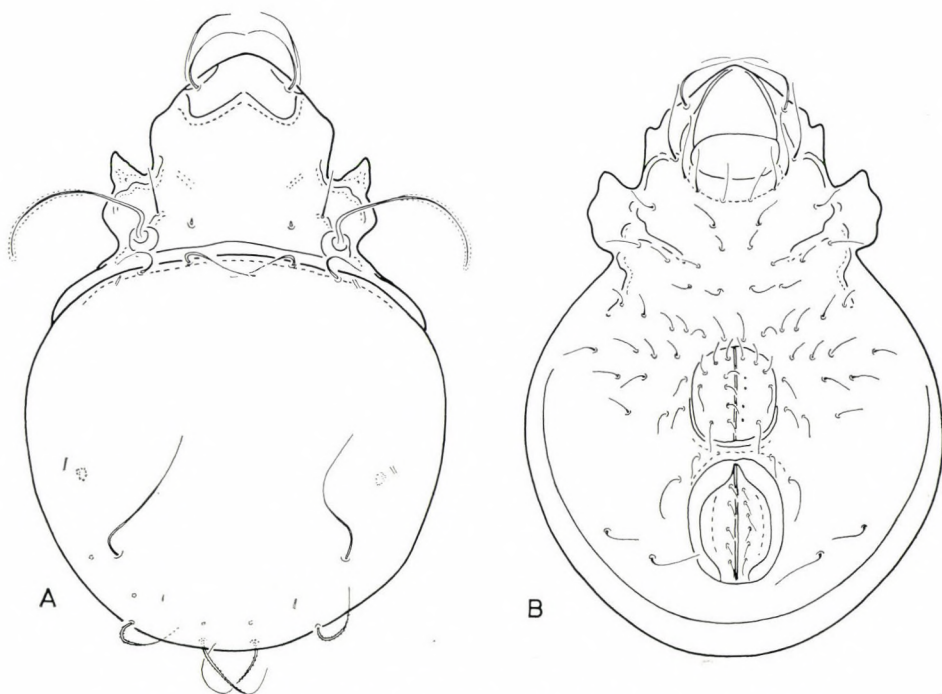


Fig. 4. *Plateremaeus berlesei* sp. n. A = dorsal side, B = ventral side



**Coxisternal region.** Apodemes weakly developed. A considerable neotrichy.

**Anogenital region.** Nine pairs of genital hairs, those arising along inner margin short. Anal plate with 6 (5–7) hairs, all short. All adanal hairs in paraanal position.

**Material examined.** Holotype (320-HO-77): Brb 7–11; paratypes: 1 ex. (320-POa-77): HNHM; 1 ex. Brb 74–75: MHNG; 2 ex. (320-POb-77), Brb 125–129: HNHM.

The new species is dedicated in honour and esteem to the memory of DR. ANTONIO BERLESE.

**Remarks.** BERLESE (1888, 1901) described two *Plateremaeus* species from South America, but the diagnoses are today insufficient for a secure recognition of his taxa. We had no opportunity to study the type-specimens in the Berlese Collection, but, on the basis of the available data, we contend that this and the following species are, in all probability, not identical with those described by BERLESE.

***Plateremaeus costulatus* sp. n. (Figs. 5A–B)**

**Measurements.** Length: 737–786  $\mu$ , width: 470–518  $\mu$ .

**Prodorsum.** Surface subdivided by both transverse and longitudinal laths, and an inwardly arcuate one arising also from bothridium. Also inter-

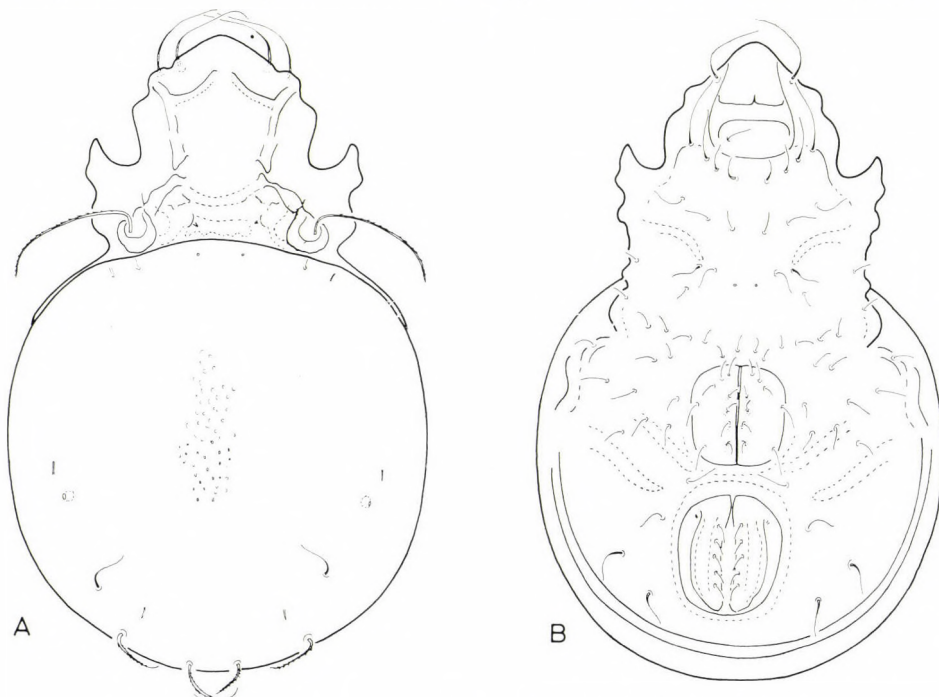


Fig. 5. *Plateremaeus costulatus* sp. n. A = dorsal side, B = ventral side

bothridial space with finer transverse laths. Rostral and lamellar hairs long, thin: interbothridial hair inclinate, spiniform, exobothridial one short and simple. Sensillus thin, directed latero-posteriorad.

**Notogaster.** Hairs *ta* and *te* minute. Posterior part of notogaster with 3 pairs of weakly ciliate short hairs. Notogaster surface with a foveolate stripe along longitudinal midline.

**Ventral plate.** Very similar to that of preceding species, with an epimeral neutrichy. Genital plate with 9, anal plates only with 5, pairs of setae. Adanal hairs also in paraanal position.

**Material examined.** Holotype (321-HO-77): Brb 133-137; paratypes: 1 ex. (321-PO-77): HNHM, 1 ex. MHNG; data as for the holotype.

**Remarks.** See the preceding species.

**Charassobates ornatus** BALOGH et MAHUNKA, 1969. — The species now studied are slightly bigger than those of the type series, the sculpture of the lamellae and on the lateral margins of the notogaster are more distinct, the foveolae of the lamellae somewhat bigger. Medially of the notogaster, in the depressed section, there is a paired chitinous thickening, with setal insertion points. These, though more weakly, are present also on the type-specimen, but they are not illustrated on the figure given. Despite these minor discrepancies, we have no doubt about the specific identity of the exemplars now studied.

**Carabodes schwartzi** BALOGH et MAHUNKA, 1969 (Figs. 6A—C). — In the original description, we have not mentioned that hair *c*<sub>2</sub> is somewhat shorter than hair *c*<sub>1</sub>, and that the rostral hairs (missing from the original drawing) are also widely phylliform but shorter than the dorsal setae. The lamellar hairs are thick, with robust cilia. We submit now also a ventral illustration of the species.

### ***Pseudotocepeus septemtuberculatus* sp. n. (Figs. 6D—E)**

**Measurements.** Length: 656—697  $\mu$ , width: 280—312  $\mu$ .

**Prodorsum.** Costula very thin, sinuate. Rostral, lamellar and inter-lamellar setae thin, arcuate, ciliate. Exobothridial hair short. Sensillus directed latero-posteriorad, ending acutely clavate. Basal margin of prodorsum with 7 (6—8) more or less coalescent and weak rows of tubercles.

**Notogaster.** Finely punctate, dorsosejugal suture straight, without apophysis or tubercles; 10 pairs of long and apically flagellate notogastral hairs present, without any essential difference in length between anterior ones and the rest.

**Ventral plate.** Apodemes narrow, sternal apodeme bifurcating (in a reversed V) before genital opening and thus framing it. Epimeral setae of diverse lengths; 3 pairs of minute genital, 1 pair of aggenital, 2 pairs of long anal, and 3 pairs of similarly long adanal, hairs present. Pori ad situated far from anal opening, in an obliquely transverse position.

**Material examined.** Holotype (322-HO-77): L-29; paratypes: 5 ex. (322-PO-77): HNHM; 1 ex. MHNG; all from the same locality as the holotype.



**Remarks.** The tubercles on the posterior margin of the body distinguish the new species from all of its congeners; it is also the first representative of the genus in the Neogea.

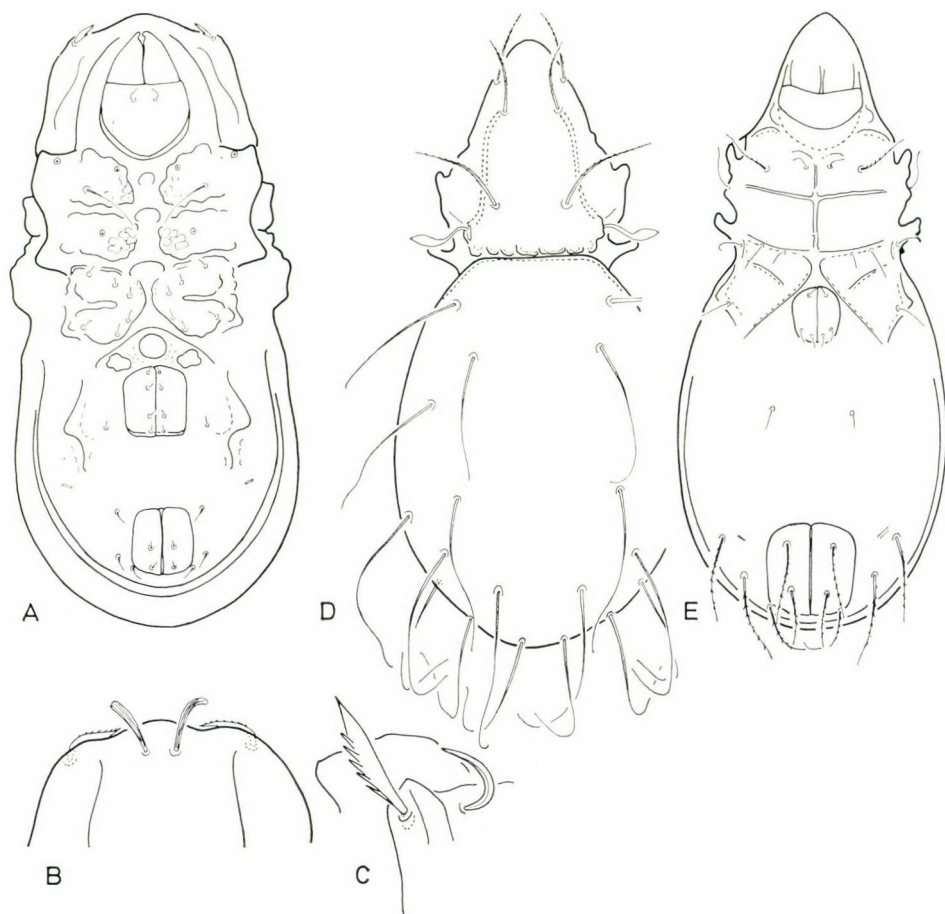


Fig. 6. *Carabodes schwartzi* BAL. et MAH., 1969. A = ventral side, B = rostral part superiorly, C = rostral part laterally. — *Pseudotocepheus septemtuberculatus* sp. n. D = dorsal side, E = ventral side

### ***Beckiella bucephala* sp. n. (Figs. 7A—B)**

**Measurements.** Length: 486—518  $\mu$ , width: 178—194  $\mu$ .

**Prodorsum.** Two costulae, basally obsoletely coalescent, near median line and each other, emitting lamellar hairs terminally. Also a short chitinous lath directed from bothridium towards rostrum. Rostral and lamellar hairs long, arcuate, ciliate, interlamellar hair shorter. Sensillus directed latero-

posteriorad, terminating in an acute clavus. Interbothridial region with some foveolae.

**N o t o g a s t e r.** Hair *ta* absent, setae *te* and *ti* comparatively short.

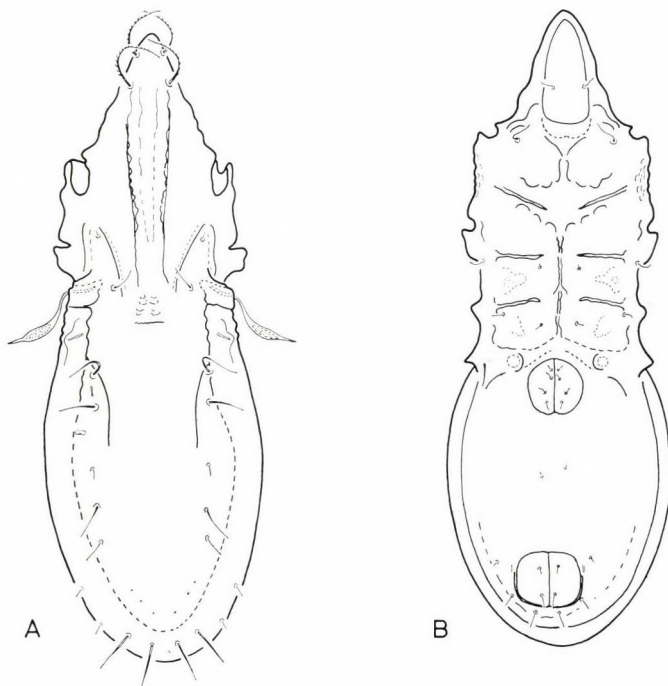


Fig. 7. *Beckiella bucephala* sp. n. A = dorsal side, B = ventral side

A great difference in length existing between hair *ms* and *r*<sub>3</sub>, *r*<sub>4</sub> arranged in a row behind it. A considerable difference also between hairs *p*<sub>1</sub>—*p*<sub>2</sub> and *p*<sub>3</sub>.

**V e n t r a l p l a t e.** Apodemes thin, weakly developed, only sejugal apodeme thicker, bearing medially a circular chitinous thickening. Four pairs of short genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal hairs present; hair *ad*<sub>3</sub> essentially shorter than the other two anal pairs.

**M a t e r i a l e x a m i n e d.** Holotype (323-HO-77): Brb 114—120; paratypes: 2 ex. (323-PO-77): HNHM, 1 ex. MHNG; data as for the holotype, extracted from the same sample.

**R e m a r k s.** The new species resembles *B. irmayi* BALOGH et MAHUNKA, 1969, but differs by the following characters: 1. hairs *te* and *ti* as long as hairs *p*<sub>1</sub> and *p*<sub>2</sub> (much longer in *B. irmayi*), 2. hair *p*<sub>3</sub> is at least thrice shorter than hair *p*<sub>2</sub> (half longer in *B. irmayi*), 3. prodorsum medially with a strong longitudinal protuberance (absent in *B. irmayi*).

***Beckiella foveolata*** BALOGH et MAHUNKA, 1969 (Figs. 8A—C). — Owing to the great reduction in scale of the drawing published with the original description, several details cannot be recognized adequately, therefore we submit now new figures of the recently discovered specimens which we consider wholly corresponding to the exemplars of the type-series.



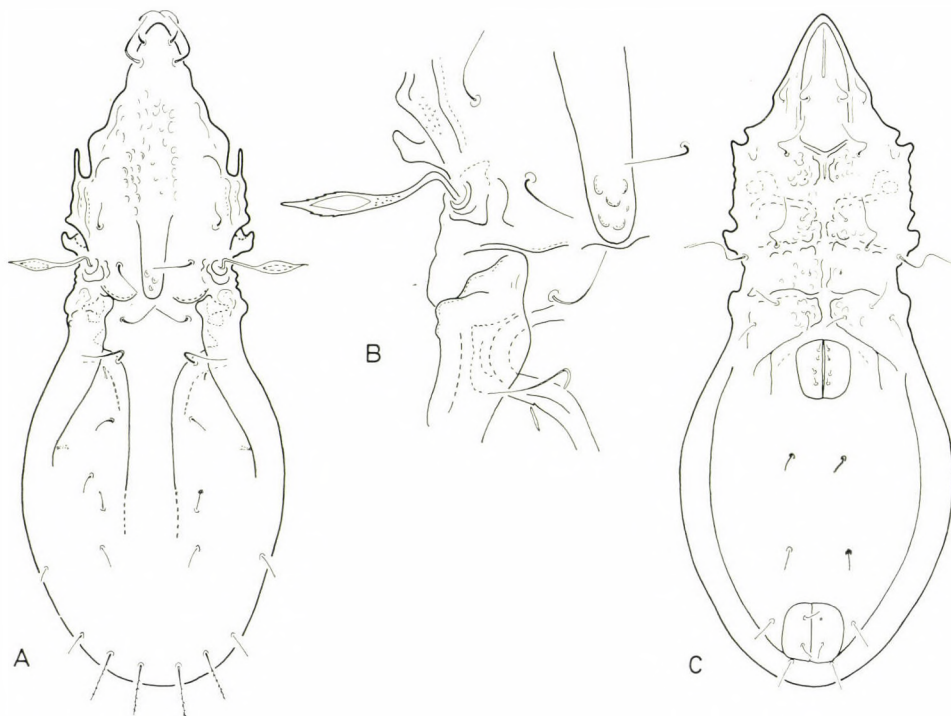


Fig. 8. *Beckiella foveolata* BAL. et MAH., 1969. A = dorsal side, B = lateral part of prodorsum, C = ventral side

***Oppiella transitoria* sp. n. (Figs. 9A—C)**

**Measurements.** Length: 445—486  $\mu$ , width: 227—257  $\mu$ .

**Prodorsum.** Rostrum widely rounded, rostral hairs arising on lateral margins. Interbothridial region with slightly convergent costulae emitting lamellar setae terminally. Interlamellar region with weak foveolae. Sensillus pectinate, with 8 branches.

**Notogaster.** Dorsosejugal region with a rounded chitinous thickening, in juxtaposition with that on basal part of prodorsum. Twelve pairs of arcuate, thin notogastral hairs present.

**Coxisternal region.** Sternal apodeme forming an anelliform structure anteriorly. Apodemes thick, well developed. Surface of epimeres with a polygonal sculpture. Epimeral hairs with those arising nearer to midline shorter than those in marginal position.

**Anogenital region.** Five pairs of genital, 1 pair of aggenital, 2 pairs of anal and 3 pairs of adanal hairs present. Hair  $ad_3$  in a preanal position, far from anal plate.

**Material examined.** Holotype (324-HO-77): Brb 133—137; paratypes: 3 ex. (324-PO-77): HHNM; 1 ex. MHNG; all deriving from the same sample.

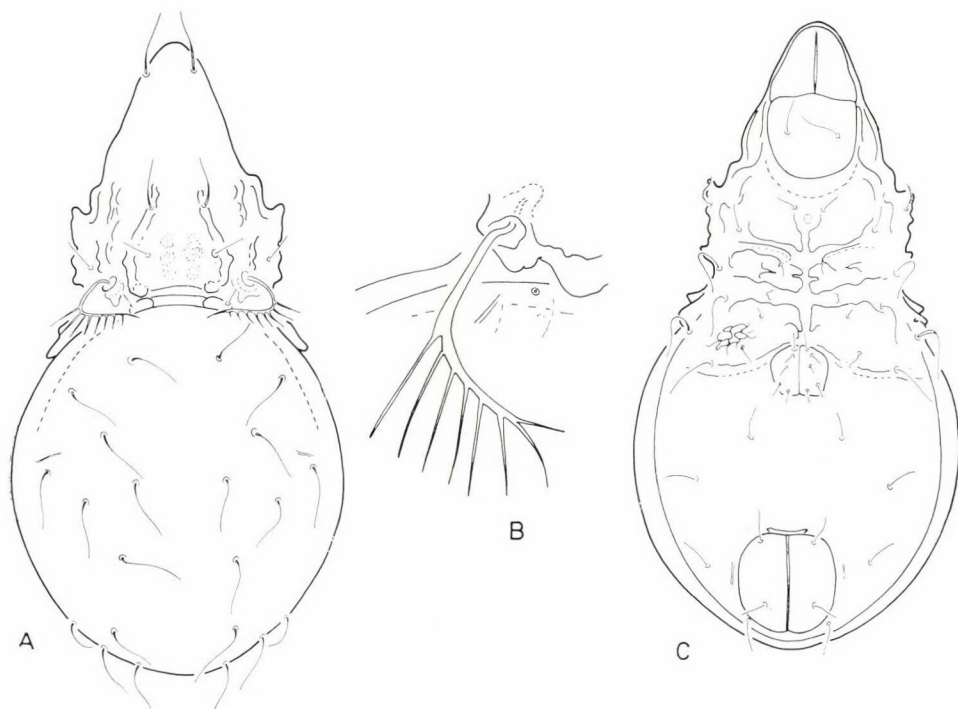


Fig. 9. *Oppiella transitoria* sp. n. A = dorsal side, B = sensillus, C = ventral side

**Remarks.** The new species bears features which cannot be found in any of the hitherto described Oppiid taxon, namely:

1. a well developed but short costula, — 2. lamellar setae considerably nearer to interlamellar ones than to rostral hairs, — 3. hairs *ta* well discernible but short; essentially shorter than notogastral setae, — 4. twelve pairs of notogastral hairs, — 5. sensillus pectinate with 8 branches, these shortening apicad, — 6. five pairs of genital setae, — 7. hairs *ad*<sub>3</sub> at the same distance, or even more removed from each other, than hairs *ad*<sub>2</sub>, — 8. pori iad situated near anus and parallel with its sides.

The known *Oppiella* species bear a notogastral crista and only ten notogastral hairs. Accordingly, we have relegated the new species to this group only with some reservations, and because we deemed it best not to establish another monotypical genus in the *Oppia*-group.

***Teratoppia brevipectinata* sp. n. (Figs. 10A—C)**

**Measurements.** Length: 272—316  $\mu$ , width: 148—172  $\mu$ .

**Prodorsum.** Shape highly similar to that of its known congeners; dorsosejugal region hollowed. Rostral hairs longer than lamellar ones, inter-



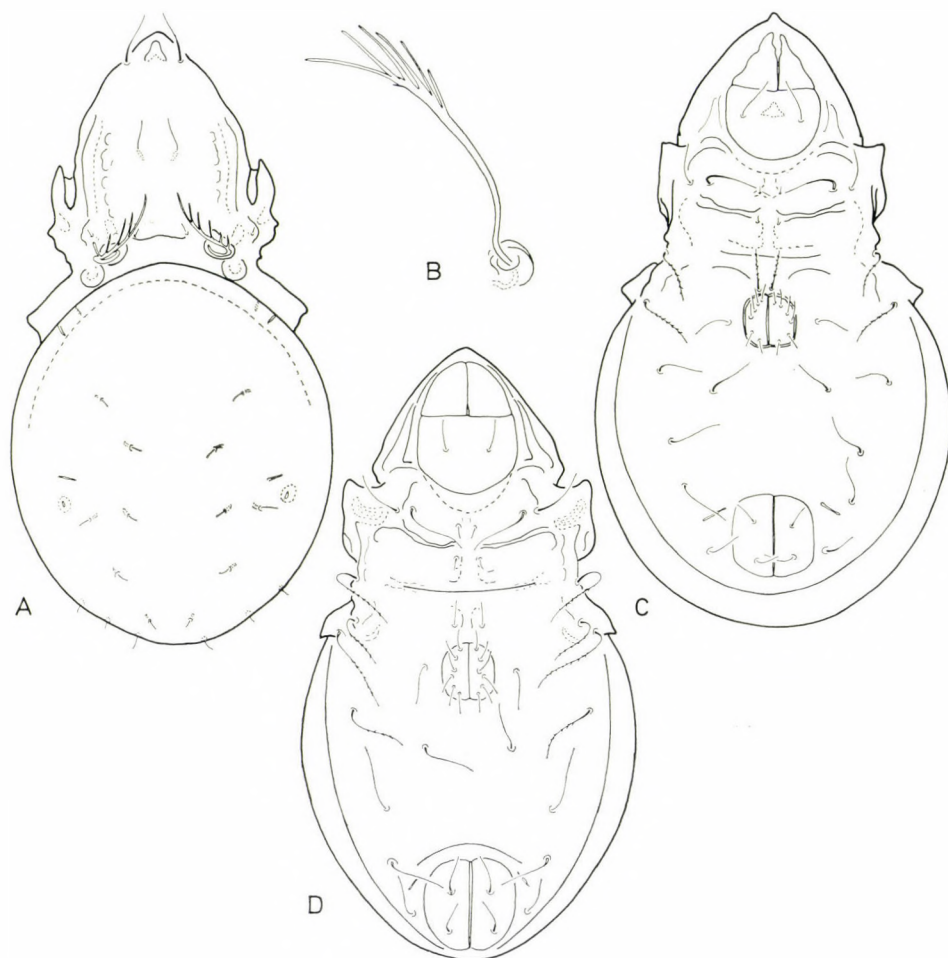


Fig. 10. *Teratoppia brevipectinata* sp. n. A = dorsal side, B = sensillus, C = ventral side; *Teratoppia pluripectinata* sp. n. D = ventral side

lamellar setae short. Sensillus reclinate, directed forwards, pectinate, with 6—7 branches.

**Notogaster.** Setae minute, diffused over notogastral surface.

**Ventral plate.** Epimeral hairs long, excepting setae *1a* and *2a*. Also hair *3a* long, straight and ciliate. Six pairs of genital, 1 pair of aggenital, 2 pairs of anal and 3 pairs of adanal hairs. Setae *ad*<sub>1-2</sub> in paraanal, hairs *ad*<sub>3</sub> in preanal, position.

**Material examined.** Holotype (325-HO-77): No. 175; paratypes: 1 ex. (325-PO-77): HNHN, 1 ex. MHNG: all from the same sample.

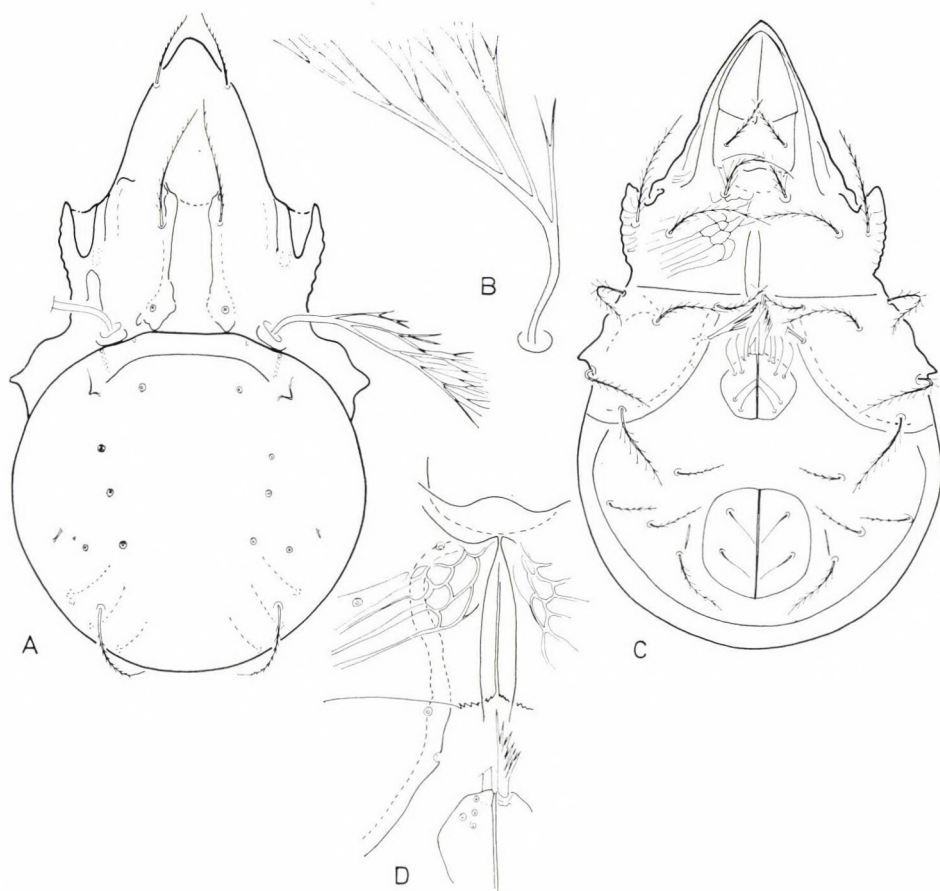


Fig. 11. *Sternoppia reticulata* BAL. et MAH., 1969. A = dorsal side, B = sensillus, C = ventral side, D = coxisternal region, ventrally

**Remarks** Only two *Teratoppia* species are known with a pectinate sensillus: *T. pluripectinata* nom. n., and *T. pectinata* BALOGH, 1961. The new species differs from *T. pluripectinata* by the smaller number of pectinate branches (6 branches against the 11–12 ones of *T. pluripectinata*), and from *T. pectinata* by the position of the notogastral hairs (in *T. pectinata* the hairs  $r_2$ ,  $r_3$ ,  $ms$ ,  $ti$  and  $te$  are arranged in a single longitudinal row, whereas hair  $r_3$  of *brevipectinata* arises nearer to the body margin as compared to the other setae).

***Teratoppia pluripectinata*** nom. n. (Fig. 10D) pro *Teratoppia pectinata* BALOGH et MAHUNKA, 1969, Acta Zool. Hung., **15**: 270, Fig. 24, nec *Teratoppia pectinata* BALOGH, 1961, Ann. Hist.-Nat. Mus. Nat. Hung., **53**: 521, Figs. 5–6.

Found in great numbers in recent materials, being one of the most common and most widely ranging species. In the original description, no figure of the ventral plate was published, this omission is now remedied.



***Sternoppia reticulata*** BALOGH et MAHUNKA, 1969 (Figs. 11A—D). — In the illustration of the very interesting species a part of the details cannot be discerned owing to the excessive reduction of the drawing of the original description, we submit therefore new figures based on recently discovered representatives of the species.

***Carabodoides longicarinatus* sp. n. (Figs. 12A—B)**

**M e a s u r e m e n t s.** Length: 344  $\mu$ , width: 208  $\mu$ .

**P r o d o r s u m.** Surface with the generically characteristic network of rough chitinous laths; its two appendages near rostrum bearing the long lamellar hairs directed characteristically marginally. Rostral and exobothridial hairs simple, interlamellar hair penicillately ciliate. Sensillus long, slightly incrassate, densely ciliate.

**N o t o g a s t e r.** Dorsosejugal region with one proclinate tubercle each in front of hairs *ta*. Notogastral surface with a pair of extremely long longitudinal costulae. Excepting hair *p*, all hairs penicillately pectinate. Hairs *te* and *ms* longest of all setae.

**V e n t r a l p l a t e.** Very similar to that of the known congeners. No sternal apodemes evolved, but sejugal apodeme wide, resembling a transverse band, with several tuberculate thickenings. Epimeral setae simple. Six pairs of

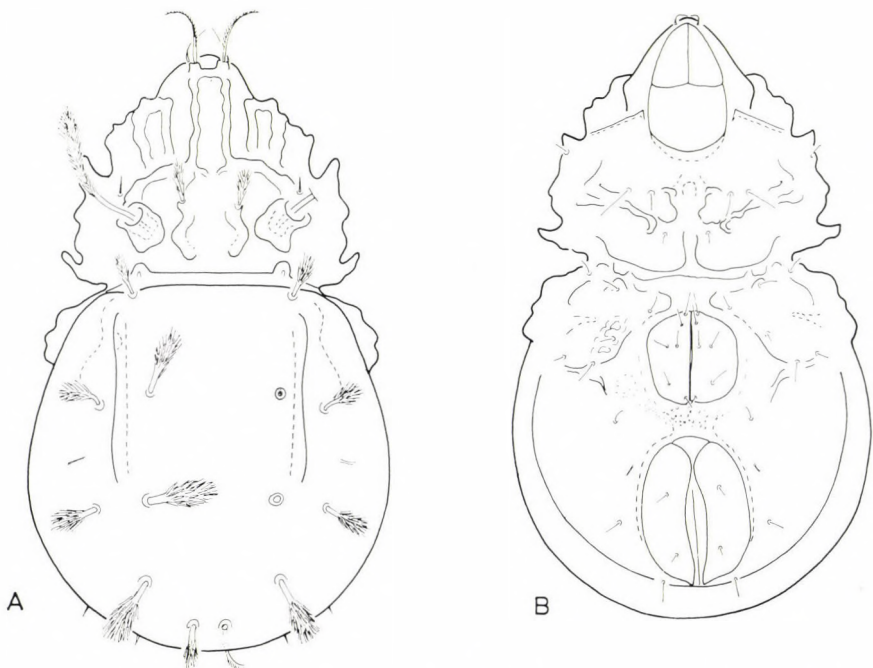


Fig. 12. *Carabodoides longicarinatus* sp. n. A = dorsal side, B = ventral side

genital, 1 pair of aggenital, 2 pairs of anal, and 2 pairs of adanal, hairs present. A foveolate sculpture between genital and anal openings.

**Material examined.** Holotype (326-HO-77): Brb 66—70.

**Remarks.** The new species is distinguished from its congeners by the long carina decurrent posteriorad from hair *ta*; this proceeds between setae *te* and *ti*, extending nearly to the basis of hairs *ms*, while in the other species it never projects beyond hair *te*. The shape of the chitinous laths on the prodorsum distinguish it also from all known species of the genus.

***Scapheremaeus subglaber* sp. n. (Figs. 13A—B)**

**Measurements.** Length: 460  $\mu$ , width: 330  $\mu$ .

**Prodorsum.** Rostral hairs arising on a transverse lath behind rostrum. Costulae narrow without apices, at their bases with two weaker, transverse and obliquely convergent laths, too, these latter decurrent from bases of interlamellar hairs. Stalk of sensillus very short, apically strongly incrassate, clavate.

**Notogaster.** Smooth, without any sculpture, bearing 7 pairs of notogastral setae, all short, spiniform, their insertions well discernible.

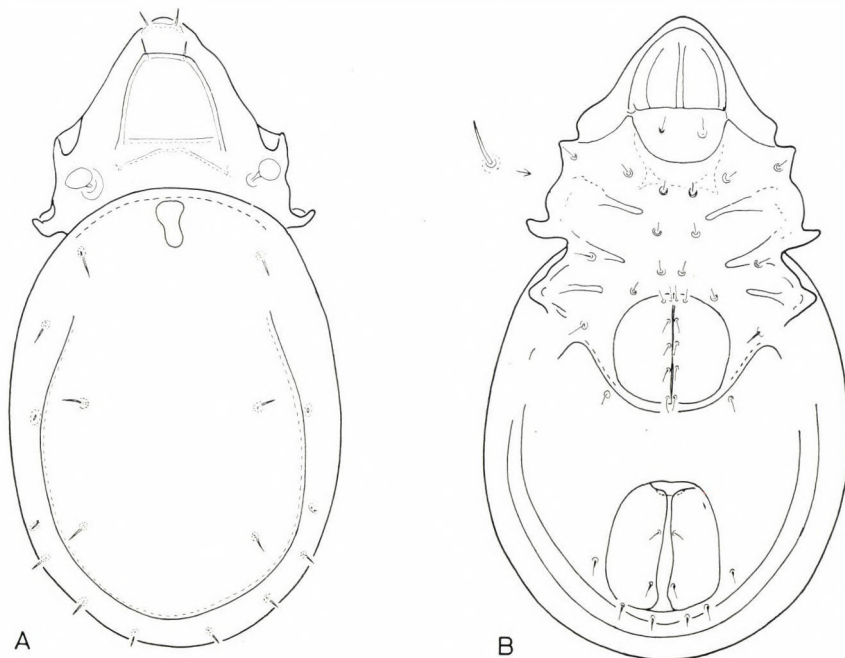


Fig. 13. *Scapheremaeus subglaber* sp. n. A = dorsal side, B = ventral side



**Ventral plate.** Epimeral hairs short, also incrassate (like dorsal setae), their bases surrounded by a chitinous ring each. Apodemes short, no sternal apodeme evolved. Six pairs of simple genital hairs present (situated, with one exception, on inner margins of genital plates), 1 pair of aggenital, 2 pairs of anal and 3 pairs of also short and obtuse adanal hairs.

**Material examined.** Holotype (327-HO-77): No. P. 39.

**Remarks.** Among the known species of the genus *Scapheremaeus* BERLESE, 1910, only *S. glaber* HAMMER, 1958 (Bolivia, 4200 m), has neither a rough rugulosity nor a foveolate sculpture in the marginal region. However, this species displays 4 pairs of centrodorsally situated setae, and thus 11 pairs of notogastral hairs. The new species has merely 7 pairs of notogastral hairs.

### ***Oripoda lenkoi* sp. n. (Figs. 14A—B)**

**Measurements.** Length: 567—613  $\mu$ , width: 332—372  $\mu$ .

**Prodorsum.** Rostral portion medially slightly acuminate. Lamellae short, bearing lamellar hairs terminally; rostral region before them also with a weak chitinous lath each, emitting rostral setae apically.

**Notogaster.** Dorsosejugal suture medially concave, aligned on a transverse line with angles of pteromorphae. These latter completely covering sensillus in the superior view. Notogastral setae short, simple, notogastral surface without sculpture.

**Ventral plate.** Similar to that of the known congeners. Its hairs with essential differences in length. Two pairs of genital and 1 pair of aggenital hairs short, 2 pairs of anal and 3 pairs of adanal setae long.

**Material examined.** Holotype (328-HO-77): L-418; paratypes: 1 ex. (328-PO-77): HNHM; 1 ex. MHNG; all extracted from the same sample.

The new species is respectfully dedicated to its collector, Mr. K. LENKO, São Paulo, Brasil.

**Remarks.** On the basis of AOKI and OHKUBO's work (1974), the new species can unequivocally be relegated to the genus *Oripoda*. There are two species known from the neotropical region: they exceed 500  $\mu$ , their notogaster is rather wide and the notogastral setae short, namely *O. magna* (BALOGH et MAHUNKA, 1966), Bolivia and *O. australis* (BALOGH et MAHUNKA, 1968), Argentina. The new species differs from both by the completely convered sensillus and that the projecting part of the pteromorphae is aligned with the middle of the dorsosejugal suture, whereas in the two related species the pteromorphae are obliquely truncate: their projecting apices being more posteriorad than the

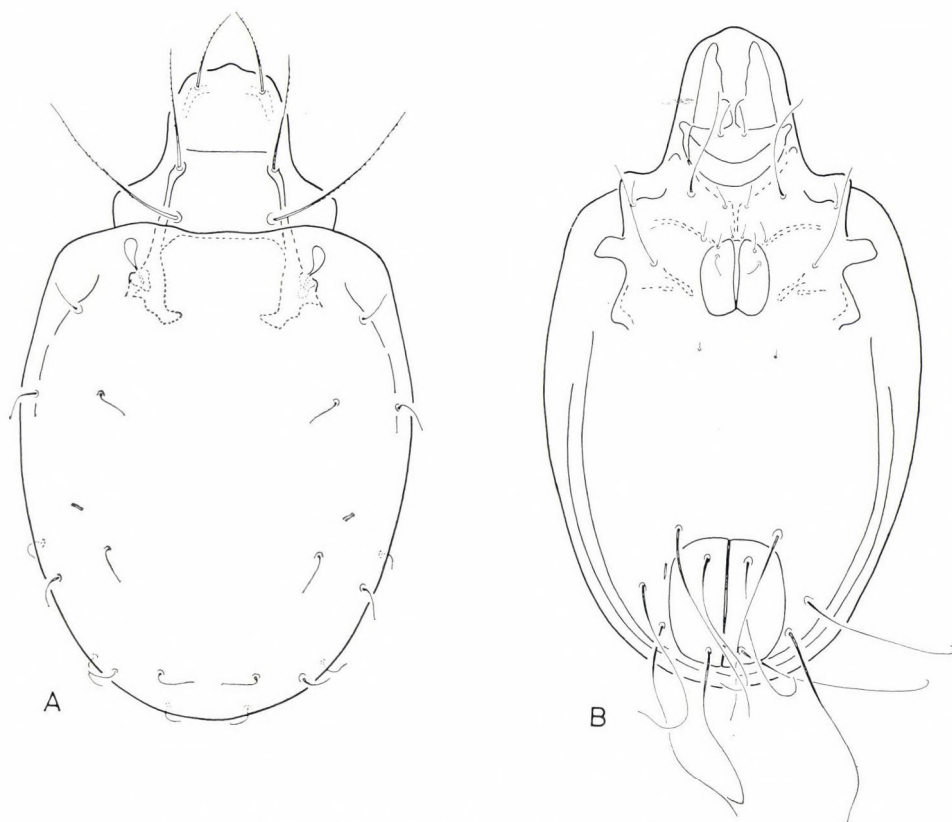


Fig. 14. *Oripoda lenkoi* sp. n. A = dorsal side, B = ventral side

middle of the dorsosejugal suture. Also, the rostral setae originate in the new species on a chitinous lath each, and the rostrum displays an obtuse projection medially, whereas the two other species lack both the chitinous laths and the obtuse projection.

### **Phylloribatula gen. n.**

**Diagnosis.** Fourteen pairs of short notogastral setae, prodorsum with lamella and translamella. Hairs *in* and *le* also phylliform, like notogastral setae. Four pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, setae present. No octotaxic organ discernible on notogaster. Legs tri-dactylous.

**Type-species:** *Phylloribatula pulchella* sp. n.

**Remarks.** This combination of features is not known in any of the hitherto described genus. On the basis of the notogastral setae, the genus can be satisfactorily distinguished from all known Oribatuloid taxa.



***Phylloribatula pulchella* sp. n. (Figs. 15A—B)**

**M e a s u r e m e n t s.** Length: 274  $\mu$ , width: 152  $\mu$ .

**P r o d o r s u m.** Rostral hairs thinner than prodorsal and notogastral setae. Prodorsal surface with obtuse lamellae (lacking a definite apex), connected by a coalescent but medially slightly narrowing transverse lamella.

**N o t o g a s t e r.** Bothridium covered in the superior view. Dorsosejugal suture with two indentations. Surface of notogaster with an obsolete polygonal sculpture, a circular feature medially per subfield. Fourteen pairs of ciliate and phylliform notogastral hairs.

**V e n t r a l p l a t e.** Apodemes weakly developed, short. Epimeral setal formula: 3—1—2—2; hairs arising here slightly ciliate. Four pairs of simple genital, 1 pair of ciliate aggenital, 2 pairs of simple anal, and 3 pairs of slightly incrassate and ciliate adanal, hairs present. Between anal and genital openings a sculpture resembling that of dorsal side.

**M a t e r i a l e x a m i n e d.** Holotype (329-HO-77): No. P-39.

**R e m a r k s.** On the basis of the features given in the description of the genus, the new species can easily be distinguished from the related Oribatulid species.

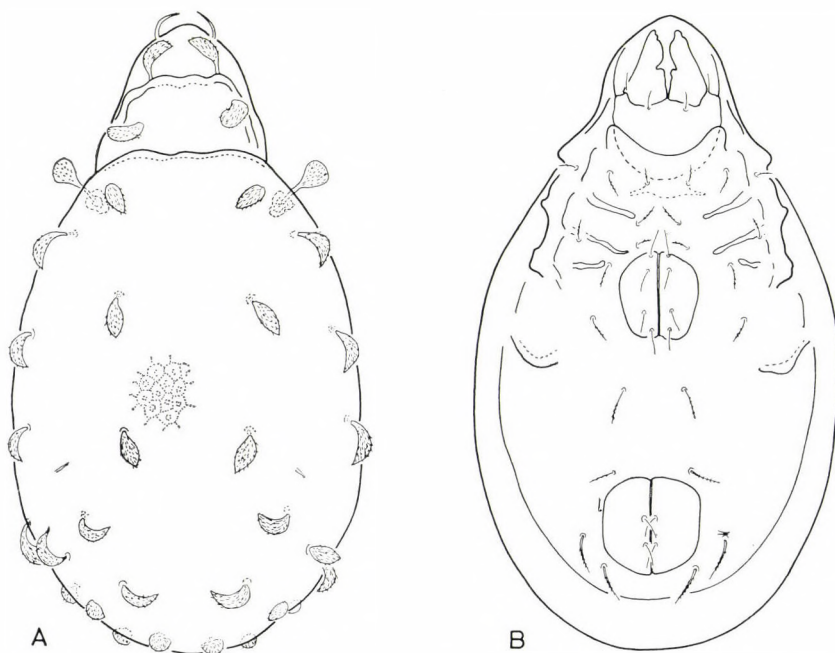


Fig. 15. *Phylloribatula pulchella* gen. n. et sp. n. A = dorsal side, B = ventral side

***Rostrozetes geminisetosus* sp. n. (Figs. 16A—B)**

**Measurements.** Length: 445—542  $\mu$ , width: 356—421  $\mu$ .

**Dorsal side.** Rostrum widely rounded. Rostral hairs originating laterally, anteriorly to robust teeth. Interlamellar hairs short, between them dorsosejugal suture protruding in an obtuse angle. Stalk of sensillus thin, apically globular, finely ciliate.

**Notogaster.** Entire surface ornamented with longitudinal rugae. A robust chitinous crest laterally, towards pteromorphae. Hairs of divers length, 11 pairs present. Site of hair *ms* emitting two pairs of setae, these are slightly thicker and longer than the other ones.

**Ventral plate.** Epimeral region with longitudinal ridges, between genital and anal openings very large foveolae present. Epimeral hairs short. Five pairs of similarly short genital and one pair of aggenital hairs. Among anal setae, *an*<sub>2</sub> considerably shorter than *an*<sub>1</sub>; also the 3 pairs of adanal hairs of various lengths. Beside anal opening, body deeply impressed, this portion bordered by a thickened chitinous margin.

**Material examined.** Holotype (330-HO-77): L-418; paratypes: 2 ex. (330-PO-77): HNHN, 1 ex. MHNG. All derived from the same sample.

**Remarks.** Together with *Rostrozetes carinatus* BECK, 1965, *R. cristatus* BALOGH et MAHUNKA, 1969, and *R. monstrosus* BALOGH et MAHUNKA, 1969,

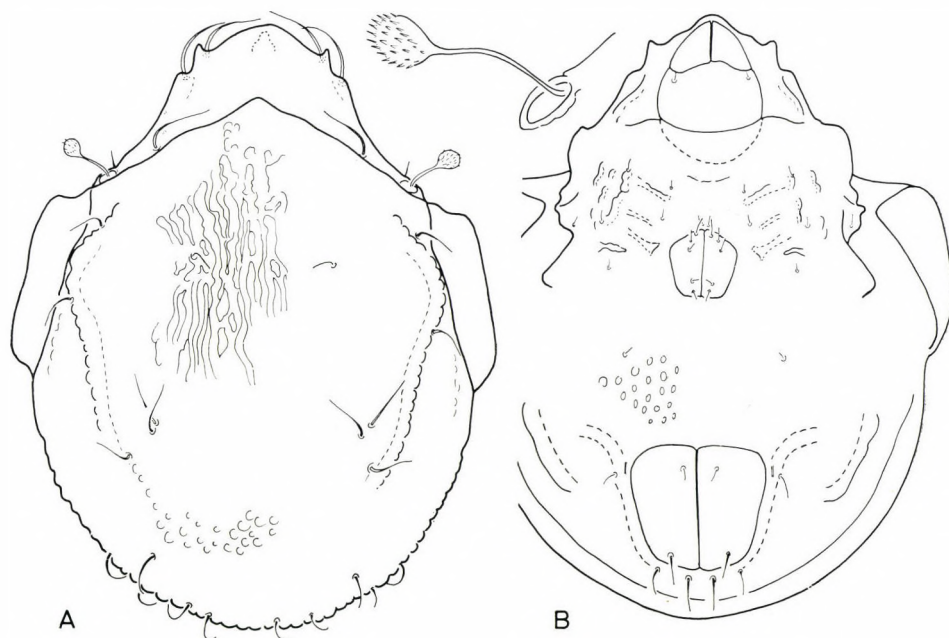


Fig. 16. *Rostrozetes geminisetosus* sp. n. A = dorsal side, B = ventral side



the new species belongs in a species-group which is characterized by the chitinous ridge on the notogaster, but, in contrast to the related taxa, the new species displays 2 nearly corascent hairs *in* the site of hair *ms*<sub>2</sub>, and longitudinal, tortuous rugae on the notogaster; also, the ventral side exhibits two pairs of characteristic chitinous laths. The combination of these characters distinguish it from all known congeners.

***Rostrozetes pinguis* sp. n. (Figs. 17A—C)**

**Measurements.** Length: 510—551  $\mu$ , width: 413—454  $\mu$ .

**Prodorsum.** Rostrum narrow, slightly elongated. Lamellar apices projecting as sharp teeth from prodorsal margins. Rostral, lamellar, and interlamellar setae similar to one another, thin, comparatively long, ciliate. Prodorsal surface with very large foveolae. Stalk of senillus long, its clavus fusiform.

**Notogaster.** Dorsosejugal suture arching far anteriorad. Notogastral surface punctate, surface of pteromorphae with longitudinal small striae. Fourteen pairs of long, thin, arcuate notogastral hairs.

**Ventral plate.** Epimeres with a polygonal sculpture, lateral surface, near pedotecta, with longitudinal lines. Surface between anal and genital

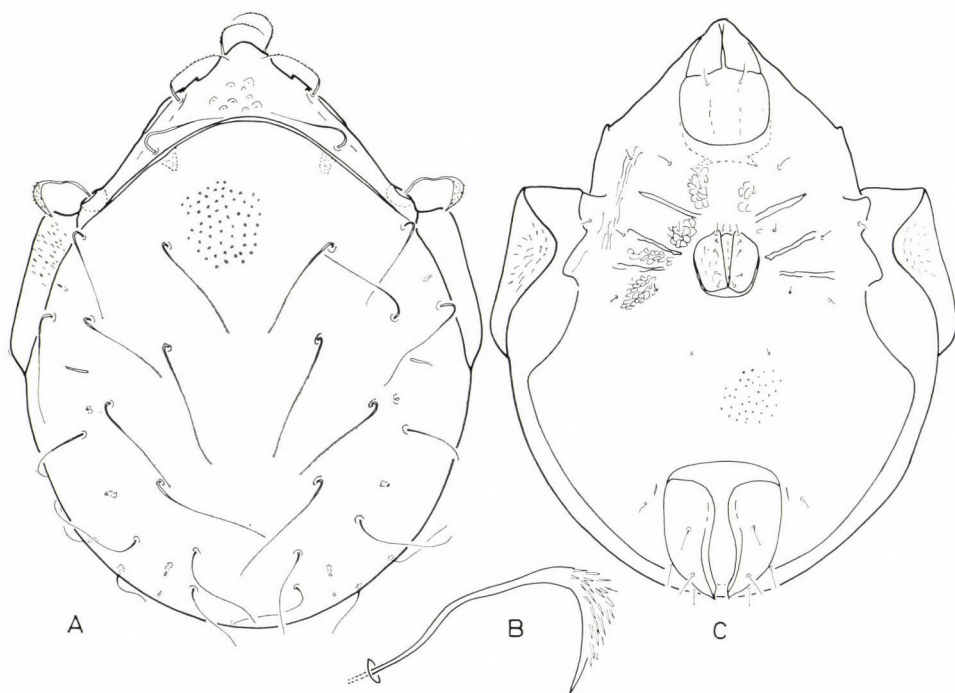


Fig. 17. *Rostrozetes pinguis* sp. n. A = dorsal side, B = sensillus, C = ventral side

openings punctate, that of genital plates also with lines. Epimeral hairs short, simple. Five pairs of minute genital, 1 pair of aggenital, 2 pairs of longer anal, and 3 pairs of adanal, hairs.

**Material examined.** Holotype (331-HO-77): Brb 138—142; paratypes: 7 ex. (331-PO-77): HNHM, 1 ex. MHNG; all derived from the same sample.

**Remarks.** Only one *Rostrozetes* SELLNICK, 1925, species with 14 pairs of notogastral hairs was known so far, namely *R. schalleri* BECK, 1965, but it differs in the form of the notogastral hairs and the sensillus as well as in the notogastral ornamentation.

### **Trixylobates gen. n.**

**Diagnosis:** Fam. Haplozetidae. Pteromorphae movable. Four pairs of true areae porosae. Ten pairs of extremely short notogastral setae, reduced nearly to alveoli. 5 pairs of genital, 3 pairs of aggenital, 2 pairs of anal, 3 pairs of adanal, hairs. Anal plates very large, considerably larger than genital plates. Legs bidactylous, heterodactylous.

**Type-species:** *Trixylobates bidactylus* sp. n.

**Remarks.** Among the pterogasterine genera with movable pteromorphae there are two which consequently display 3 pairs of aggenital hairs (*Pilobates* BALOGH, 1960, *Pilobatella* BALOGH et MAHUNKA, 1967) and one which shows it occasionally (*Peloribates* BERLESE, 1908). These are all sacculonotic genera. The combination of features given above distinguish the new genus from all of its allies. With reference to the code system used in "The Oribatid Genera of the World", the related genera can be described as follows:

<i>Trixylobates</i> gen. n.	2	10	5	3	2	3	A4
<i>Pilobates</i>	1	14	6	3	2	3	S4
<i>Pilobatella</i>	1	10	6	3	2	3	S4
<i>Peloribates</i>	1, 3	14	5	1, 3	2	3	S4
<i>Paraxylobates</i>	3	10	6	1	2	3	S4
<i>Xylobates</i>	1	10	4—6	1	2	3	A4
<i>Haplozetes</i>	3	(10)	5, 4	1	2	3	S4

### ***Trixylobates bidactylus* sp. n. (Figs. 18A—B)**

**Measurements.** Length: 720—796  $\mu$ , width: 408—463  $\mu$ .

**Dorsal side:** Prodorsal hairs long, simple. Lamellar hair arising on lamellar apices. Sensillus long, thin, not thickened, unilaterally ciliate. Notogastral surface with shallow foveolae. Ten pairs of setae or partly merely alveoli. A chitinous ring around each area porosa, heavily expressed near *Aa*.

**Ventral plate.** Apodemes weakly developed. Epimeral hairs minute, setal formula: 3—1—3—3. Five pairs of minute genital, 3 pairs of



aggenital, 2 pairs of anal, and 3 pairs of simple adanal, hairs. Surface between anal and genital openings with a sculpture resembling that of notogaster. A longitudinal ridge on both sides.

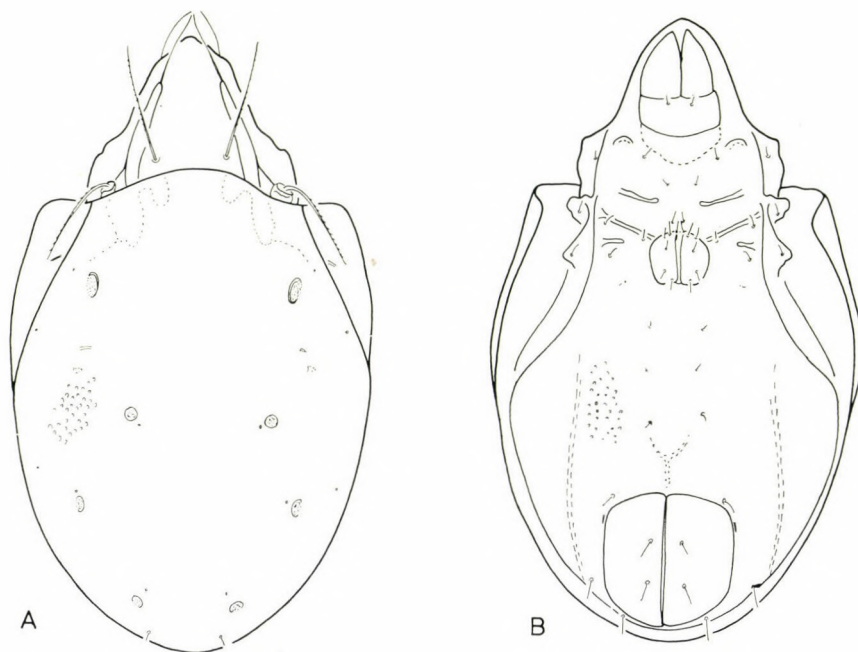


Fig. 18. *Trixylobates bidactylus* sp. n. A = dorsal side, B = ventral side

**Material examined.** Holotype (332-HO-77): Brb 133–137; paratypes: 6 ex. (332-PO-77): HNHM, 1 ex. MHNG: all from the same sample.

**Remarks.** Relationship discussed in the generic remarks.

### ***Uracrobates setiger* sp. n. (Figs. 19A–B)**

**Measurements.** Length: 608–680  $\mu$ , width: 364–520  $\mu$ .

**Prodorsum.** Lamellae and translamella developed, cuspis projecting into a lateral apex, bearing lamellar hairs. Interlamellar hairs long, longer than rostral and lamellar setae; all three pairs ciliate. Sensillus long, filiform, ciliate, reclinate.

**Notogaster.** Dorsosejugal suture attenuating medially, hardly recognizable. Ten pairs of alveoli, 4 pairs of variously sized areae porosae, each delimited by a chitinous ring.

**Ventral plate.** Epimeral hairs short, ciliate. Five pairs of genital, 1 pair of shorter aggenital, 3 pairs of minute adanal, and 1 (!) or exceptionally 2 pairs of very short anal, hairs.

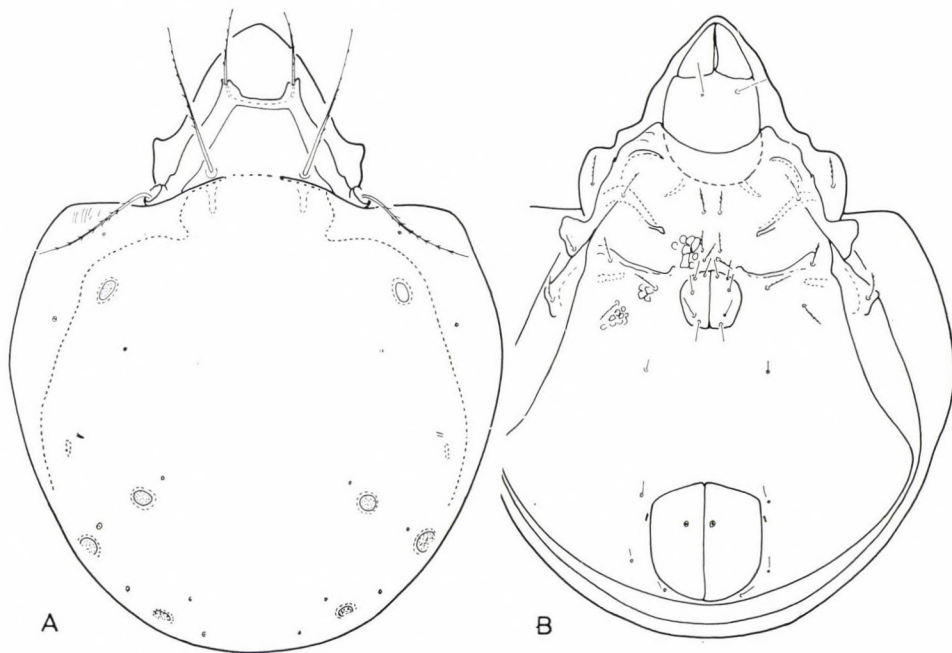


Fig. 19. *Uracrobates setiger* sp. n. A = dorsal side, B = ventral side

**Material examined.** Holotype (333-HO-77): Brb 333—137; paratypes: 8 ex. (333-PO-77): HNHM, 1 ex. MHNG; all from the same sample as the holotype.

**Remarks.** The sensillus of the two known *Uracrobates* BALOGH et MAHUNKA, 1967, is more or less clavately incrassate, that of the new species is filiform. The relegation of the two South American species into this genus is open to doubt, because they miss the elongated notogaster characteristic of the type-species.

***Plakoribates neotropicus* sp. n. (Figs. 20A—B)**

**Measurements.** Length: 376—393  $\mu$ , width: 279—298  $\mu$ .

**Prodorsum.** Lamellae wide, with 5—6 relatively large teeth. Lamellae distinct in their entire length, lamellar hair originating approximately medially. Interlamellar hairs long, reaching lamellar cusps. Sensillus short, clavate.



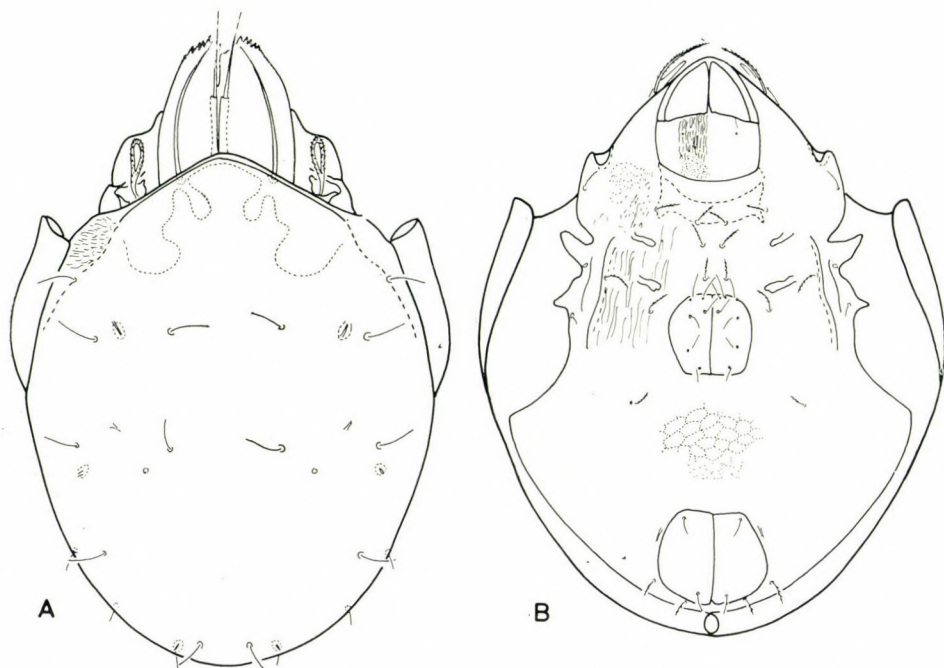


Fig. 20. *Plakoribates neotropicus* sp. n. A = dorsal side, B = ventral side

**Notogaster.** Surface finely striated along pteromorphae. Ten pairs of easily discernible notogastral hairs.

**Ventral plate.** Mentum anteriorly with longer, posteriorly with shortening lines then points, on both sides surface of pedotecta 1 punctate, posteriorly with striae. Epimeral hairs well discernible, ciliate. Six pairs of genital, 1 pair of also ciliate aggenital, 2 pairs of simple anal, and 2 pairs of ciliate adanal, hairs. Surface between anal and genital openings with a polygonal sculpture, or punctate.

**Material examined.** Holotype (334-HO-77): No. 380—1; paratypes: 3 ex. (334-PO-77): HNHM, 1 ex. MHNG; all derived from the same sample.

**Remarks.** The genus *Plakoribates* POPP, 1960, contains two species with discrete lamellae [those of the third species, *P. confluens* BALOGH, 1970 (Ceylon), are medially fused]; the interlamellar hair of *P. multicuspidus* POPP, 1960 (Egypt), and of *P. africanus* (BALOGH, 1959) (Angola) is considerably shorter than the lamella, whereas that of the new species almost reaches the lamellar cuspis.

**Parakalumma foveolata** BALOGH et MAHUNKA, 1969, ♂ nov. (Figs. 21A—B). — We have found the species in several of the recently examined materials, on one occasion the females together with the hitherto unknown males. The male end of the body is extended, emitting hair  $p_1$ . In every other characteristic, they agree with the females (excepting naturally the genitalia); no sexual dimorphism was so far known in the genus.

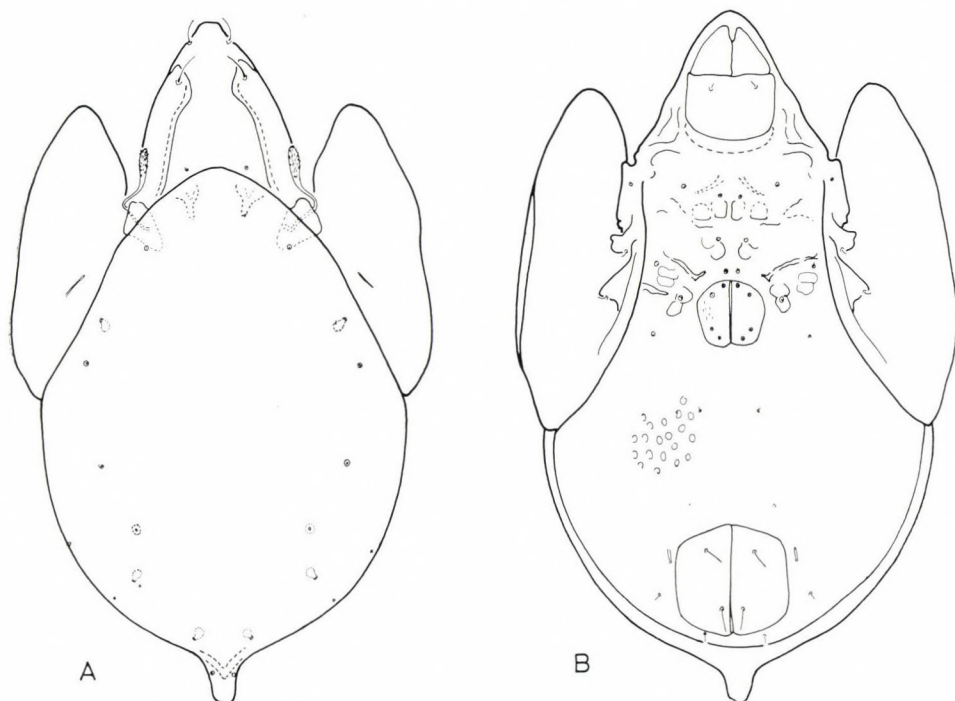


Fig. 21. *Parakalumma foveolata* BAL. et MAH., 1969, ♂ A = dorsal side, B = ventral side

***Allogalumna globulifera* sp. n. (Figs. 22A—C)**

**Measurements.** Length: 236—244  $\mu$ , width: 168—176  $\mu$ .

**Prodorsum.** Shape of lamellae characteristic of the genus; rostral and lamellar hairs minute, interlamellar hair represented only by its alveolus, anteriorly to it prodorsum with a transverse line. Sensillus short, thickening into a large clavus, its surface aciculate.

**Notogaster.** Surface smooth. Ten pairs of alveoli and 4 pairs of small arcae porosae, recognizable only with some difficulty.

**Ventral plate.** Apodemes weakly developed. Epimeral hairs minute, their majority indicated only by alveoli. Six pairs of genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, hairs. All minute. Pori iad situated far from anal opening, in an oblique position.

**Material examined.** Holotype (335-HO-77): Brb 48—52; paratypes: 2 ex. (335-PO-77): HNHM, 1 ex. MHNG; all from the same sample.

**Remarks.** The new species differs from all other congeners by having 1. the pori iad in an oblique situation and far from the anal opening (as in the species of the genus *Heterogalumna* BALOGH, 1960), 2. the sensillus short and nearly spherically extended with an aciculate surface. The notogaster is covered with a fine cerotegument (as in *Heterogalumna*).



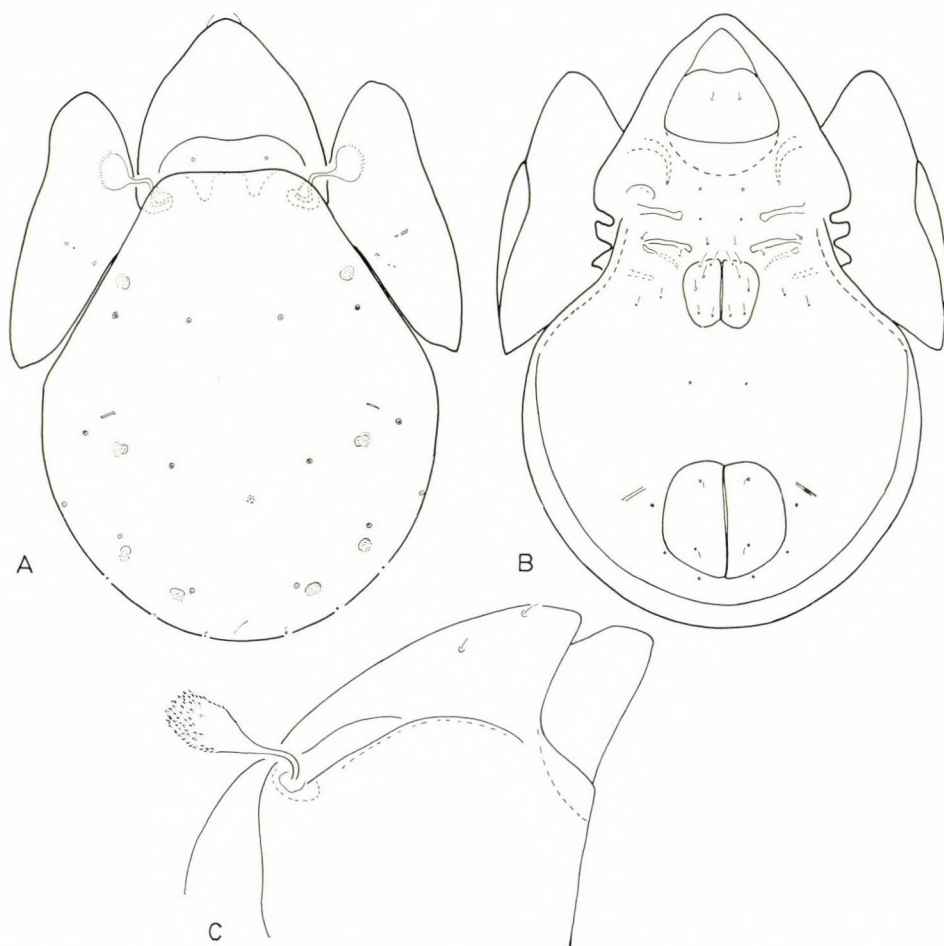


Fig. 22. *Allogalumna globulifera* sp. n. A = dorsal side, B = ventral side, C = prodorsum laterally

***Pilizetes neotropicus* sp. n. (Figs. 23A—E)**

**Measurements.** Length: 308—356  $\mu$ , width: 277—316  $\mu$ .

**Prodorsum.** Surface with fine striae. Rostral, lamellar and inter-lamellar hairs about equal in length. Sensillus latero-reclinate, incrassately fusiform, its outer surface aciculate.

**Notogaster.** Surface with longitudinal, disrupted scratch-like striae, their interspaces densely punctate. Surface of pteromorphae striated like a fingerprint. Ten pairs of minute hairs, setae *ta* arising on pteromorphae.

**Ventral plate.** All hairs minute, hardly discernible; pori iad elongated.

**Material examined.** Holotype (336-HO-77): L-418; paratypes: 3 ex. (336-PO-77): HNHM, 1 ex. MHNG; all extracted from the same sample.

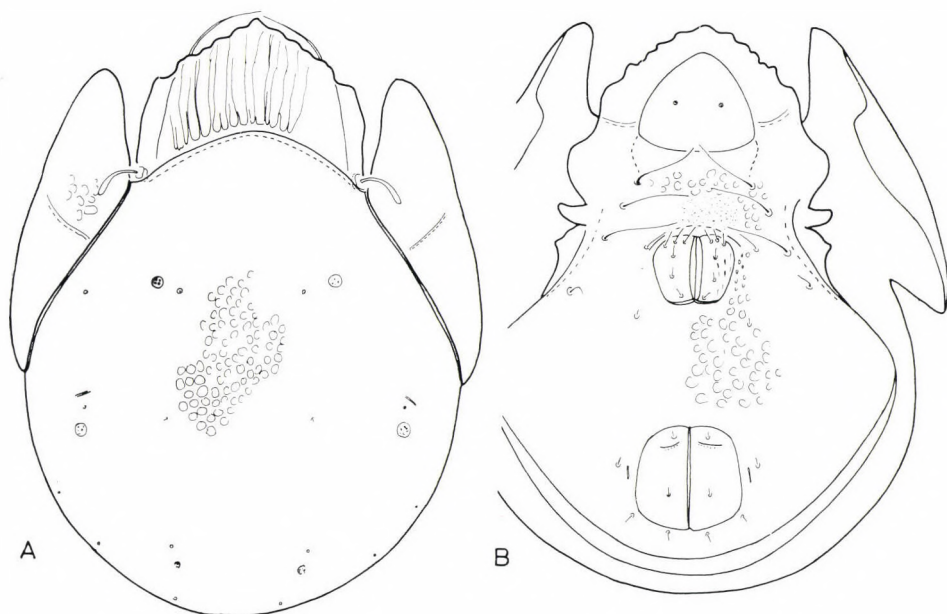


Fig. 23. *Pilizetes neotropicus* sp. n. A = dorsal side, B = ventral side, C = prodorsum laterally, D = notogastral dorsal sculpture, E = pteromorpha

**Remarks.** This is the first *Pilizetes* SELLNICK, 1937, species found outside of the Ethiopian Region, thus a considerable zoogeographical surprise. On the basis of the apobasal position of the notogastral setae (i.e. the bases of the notogastral setae and the insertional points are horizontally shifted from each other!), the shape of the sensillus, the prodorsum, the epimeral region, etc., the new species is a true *Pilizetes* taxon, but it differs from all known congeners by the longitudinal striation of the prodorsum and the notogaster, by the striated pteromorphae, the position  $ad_3$  and of the genital setae, etc. Well discernible areae porosae — as in the new species — have heretofore been described only in *Pilizetes subglaber* BALOGH, 1962.

***Pergalumna complicata* sp. n. (Figs. 24A—B)**

**Measurements.** Length: 486—527  $\mu$ , width: 405—437  $\mu$ .

**Prodorsum.** Surface from basal portion roughly subdivided by pectinately decurrent rugae, anterolateral margins accordingly sinuous. Rostral and lamellar hairs long, interlamellar setae not recognizable. Sensillus clavate, reclinate.

**Notogaster.** Ornamented with large foveolae. Ten pairs of alveoli and 3 (?) pairs of hardly discernible small areae porosae; area porosa  $A_2$  especially small.



**Ventral plate.** Epimeral region with 3 pairs of inclinate and very long hairs. Surface of epimeres ornamented latero-anteriorly with large foveolae, space in front of genital opening merely punctate. Surface of genital open-

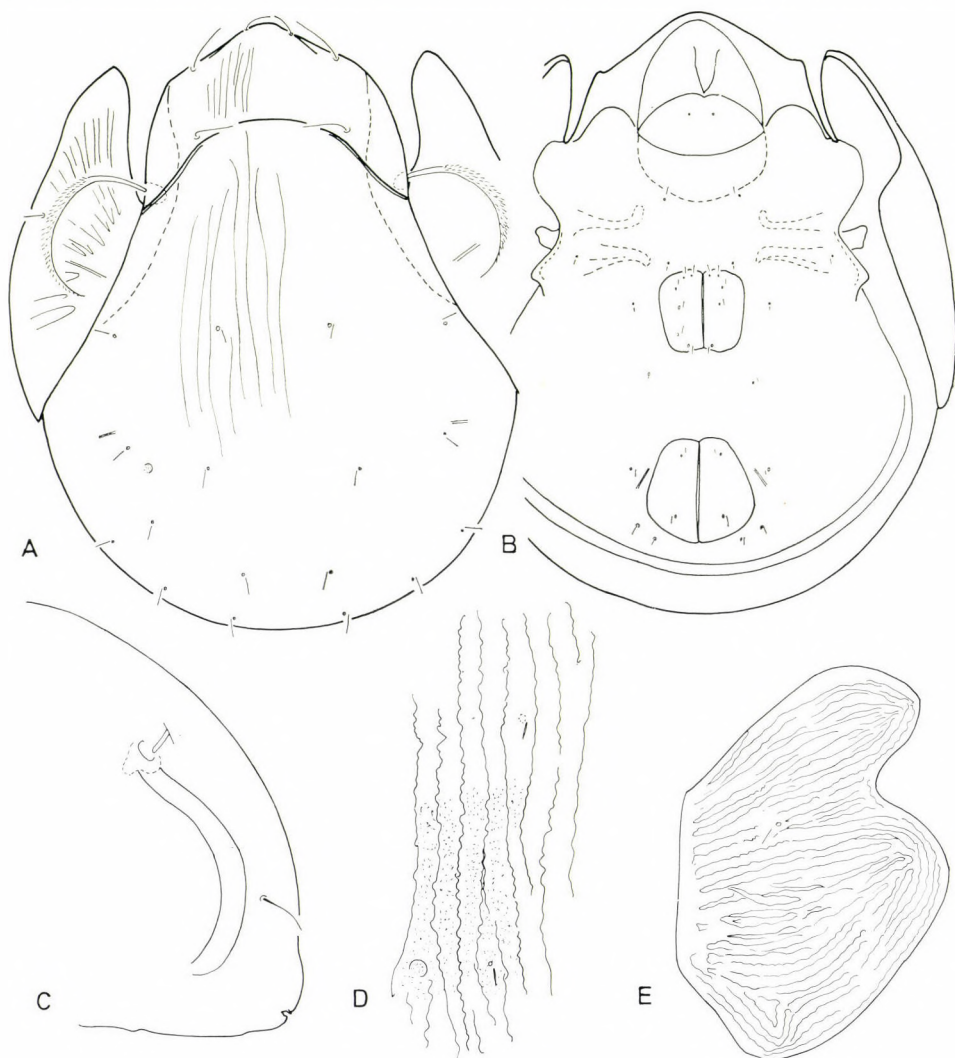


Fig. 24. *Pergalumna complicata* sp. n. A = dorsal side, B = ventral side

ings with longitudinal striae. Six pairs of short genital, 1 pair of aggenital, 2 pairs of anal, and 3 pairs of adanal, hairs. Setae  $ad_1$  and  $ad_2$  is postanal position.

**Material examined.** Holotype (337-HO-77): Brb 74–75; paratypes: 1 ex. (337-PO-77): HNHM, 1 ex. MHNG; all extracted from the same sample.

**Remarks.** The deep, longitudinal rugae of the prodorsum, the densely foveolated notogaster, the short striae of the genital plates, the transverse

groove of the anal plates posterior to the first pair of anal setae are characteristics which are unknown in any of the known *Pergalumna* GRANDJEAN, 1936, species.

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## MONGOLIAN ZERCONIDAE (ACARI: MESOSTIGMATA)\*

By

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The author describes eight new species of the genus *Zercon* C. L. KOCH: *Z. kaszabi* sp. n., *Z. mahunkai* sp. n., *Z. adoxellus* sp. n., *Z. acanticus* sp. n., *Z. mongolicus* sp. n., *Z. amidrytus* sp. n., *Z. amphibolus* sp. n., *Z. comaliatus* sp. n., and one species of the genus *Prozercon* SELLNICK: *P. micherdzinskii* sp. n., and gives a key to all species known from Mongolia.

The family Zerconidae belongs in Asia to a poorly known group of mites. As a rule, members of this family were reported occasionally in papers on other mites. New species have been discovered and described from single localities in China, Japan, Israel, the Hindu-Kush, and Himalaya [PETROWA and TASKAEWA, 1968; AOKI, 1964, 1966; ISHIKAWA, 1969, 1972; COSTA, 1966; ATHIAS-HENRIOT, 1976; BŁASZAK, 1977a, 1978 (in print)]. A greater number of species (18) are known only from North Korea, based on HALAŠKOVÁ (1977 in print) and BŁASZAK (1975, 1976, 1976a, 1976b).

The author's material derives from the collection made during the six Hungarian Expeditions by DR. Z. KASZAB (Hungarian Natural History Museum) to Mongolia in 1963—1968.

### *Zercon kaszabi* sp. n.

**Description of holotype.** Female. Length 490  $\mu\text{m}$ , width 370  $\mu\text{m}$ . Dorsal side (Fig. 1). Setae: On podonotum seta *il* pilose, all setae of marginal row of podonotum feathered. Remaining setae of podonotum smooth. Opistonotum with setae *I1*—*I3* short and delicately barbed. Seta *I4* broadened, pilose with hyaline ending, reaching to insertion of seta *I5*, this latter similar to *I4* and reaching over posterior margin of opistonotum. Setae *I6* similar to *I5* and situated 113  $\mu\text{m}$  distant from each other. Setae *Z1* and *Z2* similar to setae *I1*. Setae *Z3*—*Z4* similar to *I4*, seta *Z3* not reaching base of seta *Z4*. Seta *Z5* barbed, distance 25  $\mu\text{m}$  between seta *Z5* and *I6*. All setae in row *S* similar to seta *I4*. Seta *S1* shortest among all setae of this row and not reaching margin of opistonotum. All marginal setae of opistonotum feathered. Lengths of setae

\* Ergebnisse der zoologischen Forschungen von DR. Z. KASZAB in der Mongolei (Nr. 420). Systematic studies on the Family Zerconidae III.



of opistonotum and distances between setae of single rows are given (in  $\mu\text{m}$ ) as follows:

S1 — 43	Z1 — 26	I1 — 27
62	58	58
S2 — 51	Z2 — 26	I2 — 27
68	43	45
S3 — 60	Z3 — 49	I3 — 29
49	70	43
S4 — 68	Z4 — 68	I4 — 53
	59	51
	Z5 — 39	I5 — 66
		47
		I6 — 73

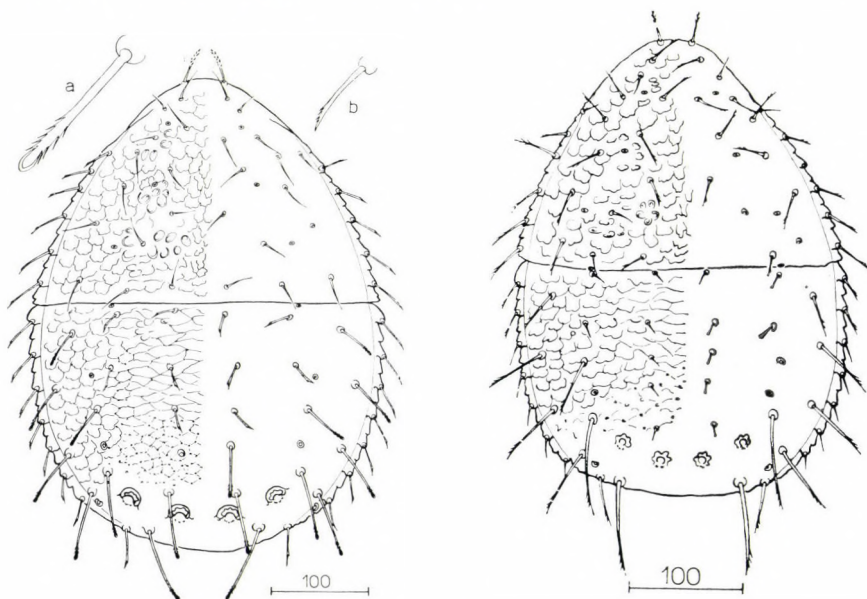
**Pores.** Pore Po1 behind edge of podonotum, on the lines connecting setae s6 and Z1. Pore Po2 between setae Z2 and S2, near seta Z2. Pore Po3 on the line connecting setae Z3 and Z4.

**Sculpture.** Entire podonotum with an irregular tile-like sculpture. Tile-like sculpture of opistonotum reaching to base of seta I3; remaining part of opistonotum delicately and finely maculate. Dorsal cavities distinct and well sclerotized, their axes parallel to body axis.

**Ventral side.** Chaetotaxy and shape of peritremal shield typical of *Zercon* C. L. KOCH. Anterior margin of ventro-anal shield with four setae.

**Deutonymph** (Fig. 2). Length 407  $\mu\text{m}$ , width 304  $\mu\text{m}$ .

Podonotal setae r1, s1 and z1 smooth, remaining setae pilose. Opistonotal setae I1—I5, Z1—Z2 and R3—R7 short and smooth, all other setae pilose.



Fi. 1. *Zercon kaszabi* sp. n., dorsal side ♀; seta I6 (a) and seta I3 (b)  
Fig. 2. *Zercon kaszabi* sp. n., dorsal side of deutonymph

Setae I6 110  $\mu\text{m}$  distant from each another. Seta Z3 reaching to insertion of seta Z4. Seta S1 not reaching base of seta S2, but extending to margin of opistonotum. Seta S2 projecting by half of its length over margin of opistonotum. A distance of 21  $\mu\text{m}$  between setae Z5 and I6. Position of pores on podo- and opistonota as in female. Sculpture of podo- and opistonota similar, but less discernible than in female. Dorsal cavities lobed frontally. Anterior margin of ventro-anal shield with four setae. Lengths of setae of opistonotum and distances between setae of the single rows in  $\mu\text{m}$  as follows:

S1 — 43	Z1 — 16	I1 — 16
53	47	45
S2 — 55	Z2 — 16	I2 — 14
54	35	35
S3 — 62	Z3 — 62	I3 — 12
49	51	25
S4 — 70	Z4 — 80	I4 — 12
	53	35
	Z5 — 45	I5 — 12
		55
		I6 — 78

**Protonymph** (Fig. 3). Length 352  $\mu\text{m}$ , width 220  $\mu\text{m}$ .

Podonotal setae r5 smooth. Remaining setae of podonotum pilose. Opistonotal setae I1—I5, Z1—Z2 and R2 short and smooth. Remaining setae of opistonotum long and pilose. Distance between setae I6 82  $\mu\text{m}$  and between setae Z5 and I6 18  $\mu\text{m}$ . Seta S1 reaching insertion of seta S2. Lengths of setae of opistonotum and distances between setae of single rows in  $\mu\text{m}$  as follows:

S1 — 45	Z1 — 14	I1 — 14
43	35	35
S2 — 56	Z2 — 8	I2 — 8
39	31	29
S3 — 59	Z3 — 59	I3 — 8
39	43	29
S4 — 62	Z4 — 68	I4 — 8
	39	37
	Z5 — 43	I5 — 8
		37
		I6 — 72

Position of pores on opistonotum as in deutonymph. Sculpture on podo- and opistonota similar, but less discernible than in deutonymph. Dorsal cavities lobed frontally.

**Systematic position.** This species rather resembles *Zercon caenolestes* BLASZAK, 1976, from which it differs by the following features:

***Zercon kaszabi* sp. n.**

1. Setae I1—I3, Z1—Z2 delicately barbed.
2. Seta I4 broadened, pilose, with hyaline ending, reaching insertion of seta I5. Seta I4 similar in length to I5.
3. Pore Po3 situated on line connecting setae Z3 and Z4.

***Zercon caenolestes* BLASZAK, 1976**

1. Setae I1—I3, Z1—Z2 smooth.
2. Seta I4 pilose and not reaching insertion of seta I5. Seta I4 more than twice shorter than seta I5.
3. Pore Po3 removed from line connecting setae Z3—Z4.



Localities (after the original label data):

Holotype ♀: Mongolia, Central aimak: Uubulan am Fluss Tola, 60 km O von Ulan-Baator, 1370 m, 25. VIII. 1965 (Nr. 481), leg. Z. KASZAB. — Paratypes: Nr. 481, 20 ♀♀, 1 deutonymph, 1 protonymph; Ulan-Baator, Nucht im Bogdo ul, 12 km SO von Zentrum, 1500 m, 12. VI. 1964 (Nr. 123), 1 ♀; SO von Somon Bajancogt, 1600 m, 4. VII. 1964 (Nr. 266), 1 ♀; Tosgoni ovoo, 6–10 km N von Ulan-Baator, 1700 m, 4.–8. VI. 1968 (Nr. 936), 8 ♀♀.

### *Zercon mahunkai* sp. n.

**Description of holotype.** Female. Length 510  $\mu\text{m}$ , width 345  $\mu\text{m}$ . Dorsal side (Fig. 4). Setae: All setae of podonotum finely barbed and delicately broadened terminally. Opistonotum with setae I1–I2 similar in shape to setae of podonotum. Setae I3–I6 barbed and considerably broadened apically. Seta I3 not reaching insertion of seta I4. Seta I4 reaching insertion of seta I5. Seta I5 not extending to posterior margin of opistonotum. Distance between setae I6 113  $\mu\text{m}$ . Setae Z1–Z2 similar to setae I1–I2. Seta Z3 similar to I6 and reaching to base of seta Z4. Seta Z4 similar in length and shape to I6. Seta Z5 similar to podonotal setae. Distance between seta Z5 and I6 26  $\mu\text{m}$ . Seta S1 similar in shape to seta Z1 and reaching as far as half distance to S2. Setae S2–S4 barbed and considerably broadened terminally. Seta S2 reaching

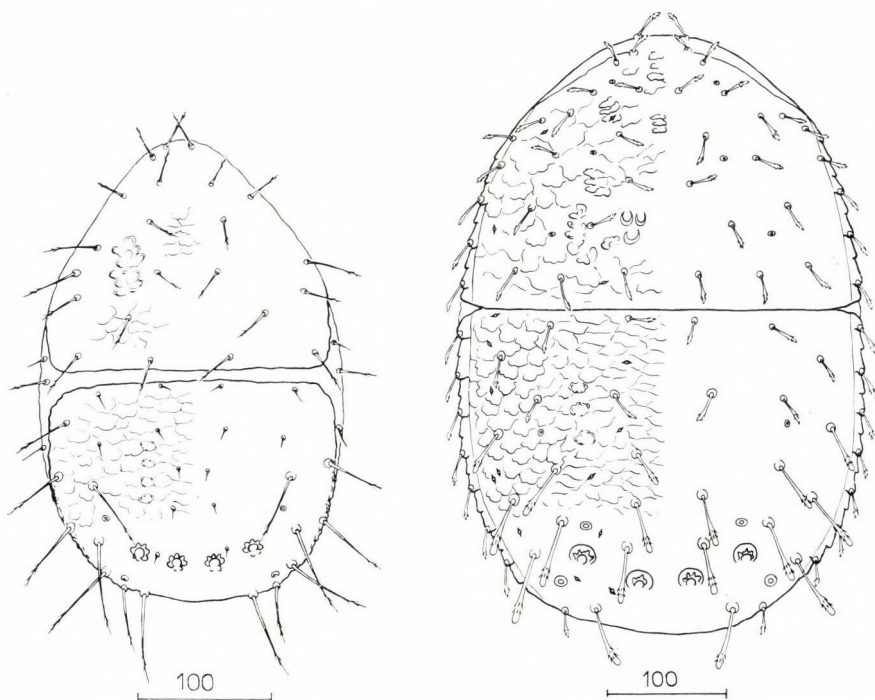


Fig. 3. *Zercon kaszabi* sp. n., dorsal side of protonymph

Fig. 4. *Zercon mahunkai* sp. n., dorsal side ♀

to margin of opistonotum. Marginal setae of opistonotum finely barbed and delicately broadened apically. Lengths of setae of opistonotum and distances between setae of singular rows in  $\mu\text{m}$  as follows:

S1 — 29	Z1 — 22	I1 — 22
64	64	64
S2 — 39	Z2 — 22	I2 — 25
59	59	53
S3 — 43	Z3 — 47	I3 — 33
49	43	45
S4 — 57	Z4 — 57	I4 — 45
	70	35
	Z5 — 22	I5 — 46
		59
		I6 — 49

**Pores.** Pore Po1 situated somewhat obliquely anteriorad to inner side of insertion of seta Z1. Pore Po2 on line connecting setae Z2 and Z3, near seta Z2. Pore Po3 on line connecting seta Z4 and I5, above outer dorsal cavities. Pore Po4 rather large and aligned with setae S4 and I6.

**Sculpture.** Entire podonotum with an irregular tile-like sculpture. Opistonotum with a tile-like sculpture in frontal angles, and with a reticulated one fronto-medially, disappearing posteriorad. Dorsal cavities distinct and well sclerotized, with axes parallel to body axis.

**Ventral side.** Chaetotaxy and shape of peritremal shield typical of *Zercon* C. L. KOCH. Adgenital shields present. Anterior margin of ventro-anal shield with four setae.

Male. Length 440  $\mu\text{m}$ , width 280  $\mu\text{m}$ .

Setae on podo- and opistonota as in female. Position of pores as in female. Distance 98  $\mu\text{m}$  between setae I6. Lengths of setae of opistonotum and distances between setae of singular rows in  $\mu\text{m}$  as follows:

S1 — 21	Z1 — 23	I1 — 21
39	55	49
S2 — 31	Z2 — 23	I2 — 23
55	39	41
S3 — 55	Z3 — 43	I3 — 27
41	39	33
S4 — 55	Z4 — 53	I4 — 43
	60	29
	Z5 — 33	I5 — 45
		51
		I6 — 55

**Systematic position.** This species resembles *Zercon athiasi* VINCZE, 1965, from which it differs by the following features:

***Zercon mahunkai* sp. n.**

***Zercon athiasi* VINCZE, 1965**

- |  |  |
|--|--|
| 1. Setae i3—i6, z1—z2 and s1—s6 finely barbed and finely broadened apically.<br>2. Setae I1—I2 and Z1 barbed and broadened apically. | 1. Setae i3—i6, z1—z2 and s1—s6 short and smooth.<br>2. Setae I1—I2 and Z1 short and smooth. |
|--|--|



3. Axes of outer and inner dorsal cavities parallel with body axis. Dorsal cavities measuring 22  $\mu\text{m}$ .      3. Axes of outer and inner dorsal cavities strikingly oblique. Dorsal cavities very large and measuring 40  $\mu\text{m}$ .

Holotype ♀: Mongolia, Mittelgobi aimak: Delgerchangaj ul Gebirge, 6 km S von Somon Delgerchangaj, 1650 m, 11. VII. 1967 (Nr. 909), leg. Z. KASZAB. — Paratypes: Nr. 909, 2 ♀♀, 1 ♂. — U b u r c h a n g a j a i m a k : Arc Bogd ul, ung. 20 km S von Somon Chovd, 1760 m, 21. VI. 1964 (Nr. 167), 1 ♀.

### **Zercon adoxellus sp. n.**

**Description of holotype.** Female. Length 520  $\mu\text{m}$ , width 430  $\mu\text{m}$ . Dorsal side (Fig. 5). Setae: Podonotal setae il barbed, marginal setae r3—r6 feathered, remaining setae smooth. Opistonotal setae I1—I5 short and smooth. Seta I5 above inner dorsal cavity. Setae I6 long, broadened and terminally feathered. Distance between setae I6 133  $\mu\text{m}$ . Setae Z1 and Z2 short and smooth. Setae Z3 and Z4 long, broadened and feathered apically. Seta I5 short and smooth, distance between setae Z5 and I6 20  $\mu\text{m}$ . Seta S1 smooth and not reaching margin of opistonotum. Setae S2—S4 long, similar to seta I6. Seta S2 reaching by almost half of its length over margin of opistonotum. Amongst marginal setae of opistonotum, only setae R1—R2 feathered, remaining setae of this row smooth. Lengths of setae of opistonotum and distances between setae of single in  $\mu\text{m}$  as follows:

S1 — 33	Z1 — 20	I1 — 23
58	62	58
S2 — 51	Z2 — 20	I2 — 23
74	45	49
S3 — 62	Z3 — 51	I3 — 20
58	62	49
S4 — 62	Z4 — 64	I4 — 20
	68	45
	Z5 — 31	I5 — 18
		50
		I6 — 62

**Pores.** Opistonotal pore Po1 between anterior margin of opistonotum and insertion of seta Z1. Pore Po2 on line connecting setae S2—Z3. Pore Po3 on line connecting setae I5 and Z4, over exterior dorsal cavities.

**Sculpture.** Entire podonotum with an irregular tile-like sculpture. Opistonotum with sculpture tile-like in upper angles, reticulated fronto-medially. This sculpture reaching base of seta I3. Remaining part of opistonotum covered with distinct spots. Dorsal cavities distinct, well sclerotized, with axes parallel to body axis.

**Ventral side.** Chaetotaxy and shape of peritremal shield typical of *Zercon* C. L. KOCH. Adgenital shields present. Anterior margin of ventro-anal shield with four setae.

Male. Length 410  $\mu\text{m}$ , width 327  $\mu\text{m}$ .

Setae on podo- and opistonota as in female. Position of pores as in female. Lengths of setae of opistonotum and distances between setae of singular rows in  $\mu\text{m}$  as follows:

S1 — 29	Z1 — 15	I1 — 17
S2 — 47	Z2 — 15	I2 — 17
43	25	37
S3 — 56	Z3 — 43	I3 — 14
41	53	27
S4 — 60	Z4 — 70	I4 — 14
	39	35
	Z5 — 33	15 — 15
		33
		I6 — 68

**Systematic position.** This species resembles *Zercon spatulatus* C. L. KOCH, 1839, from which it differs by the following features:

***Zercon adoxellus* sp. n.**

1. Seta Z3 elongately feathered terminally and reaching insertion of seta Z4.
2. Seta S2 long and reaching by almost half of its length over margin of opistonotum.
3. Long setae of opistonotum broadened and feathered apically.
4. Dorsal cavities distinct and smooth frontally.

***Zercon spatulatus* C. K. KOCH, 1839**

1. Seta Z3 smooth and twice shorter than distance between Z3—Z4.
2. Seta S2 short and not reaching margin of opistonotum.
3. Long setae of opistonotum pilose, with hyaline ending.
4. Dorsal cavities stare-like in shape, with lobed prominences.

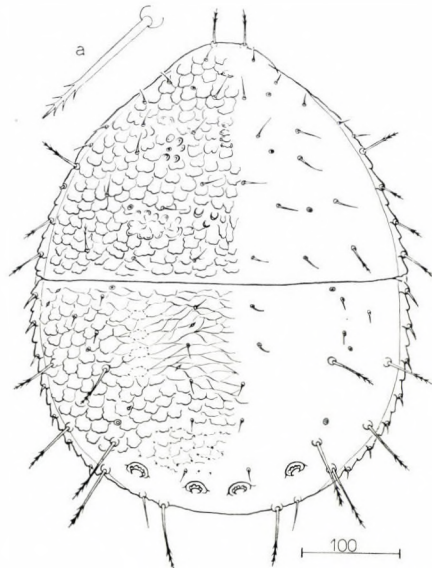
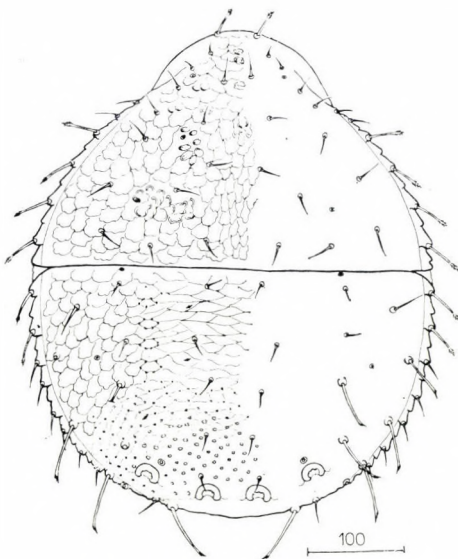


Fig. 5. *Zercon adoxellus* sp. n., dorsal side ♀  
Fig. 6. *Zercon acanticus* sp. n., dorsal side ♀; seta I6 (a)



Holotype ♀: Mongolia, Central aimak: Ulan-Baator, Zaisan im Bogdo ul, 5 km S vom Zentrum, 1600 m, 6. VI. 1966 (Nr. 501), leg. Z. KASZAB. — Paratypes: Central aimak: SO von Somon Bajancogt, 1600 m, 4. VII. 1964 (Nr. 266), 2 ♂♂; 11 km OSO von Somon Bajancogt, 1600 m, 13. VI. 1968 (Nr. 947), 1 ♀; Tosgoni ovoo, 6–10 km N von Ulan-Baator, 1700 m, 4.–8. VI. 1968 (Nr. 936), 4 ♂♂.

### *Zercon acanticus* sp. n.

**Description of holotype.** Female. Length 495  $\mu\text{m}$ , width 400  $\mu\text{m}$ . Dorsal side (Fig. 6). Setae: Podonotum with setae i1, s6 and r3–r6 pilose, remaining setae smooth. Opistonotal setae II–I5 short and smooth. Setae I6 long and barbed and 130  $\mu\text{m}$  distant from each other. Setae Z1 and Z2 short and smooth. Seta Z3 and Z4 similar to I6, seta Z3 not reaching insertion of seta Z4. Seta Z5 smooth, distance between seta Z5 and I6 22  $\mu\text{m}$ . Seta S1 short and smooth, similar to seta Z1. Seta S2 barbed and reaching by more than half of its length over margin of opistonotum. Setae S3 and S4 similar to seta I6. Marginal setae of opistonotum short, smooth, stout and thorn-like. Lengths of setae of opistonotum and distances between setae of single rows in  $\mu\text{m}$  as follows:

S1 — 16	Z1 — 16	I1 — 16
53	39	39
S2 — 55	Z2 — 16	I2 — 16
68	39	43
S3 — 60	Z3 — 51	I3 — 16
58	78	43
S4 — 66	Z4 — 74	I4 — 16
	62	55
	Z5 — 31	I5 — 16
		39
		I6 — 66

**Pores.** Pore Po2 situated below line connecting setae Z2 and S2. Pore Po3 on line connecting setae Z3 and Z4, near Z4.

**Sculpture.** Entire podonotum with an irregular tile-like sculpture. Opistonotal tile-like sculpture reaching to base of seta I4. Remaining part of opistonotum covered with delicate and small spots. Dorsal cavities distinct and well sclerotized, with axes parallel to body axis.

**Ventral side.** Chaetotaxy and shape of peritremal shield typical of *Zercon* C. L. KOCH. Adgenital shields present. Two setae on anterior margin of ventro-anal shield.

**Male.** Length 370  $\mu\text{m}$ , width 300  $\mu\text{m}$ .

Setae on podo- and opistonota as in female. Position of pores as in female. Distance 98  $\mu\text{m}$  between setae I6. Lengths of setae of opistonotum and distances between setae of single rows in  $\mu\text{m}$  as follows:

S1 — 10	Z1 — 10	I1 — 10
43	20	38
S2 — 50	Z2 — 10	I2 — 10
48	20	28
S3 — 56	Z3 — 35	I3 — 10
43	68	25
S4 — 60	Z4 — 63	I4 — 10
	50	32
	Z5 — 25	I5 — 10
		58
		I6 — 60

**Systematic position.** This species is rather similar to *Zercon zelawaiensis* SELLNICK, 1944, from which it differs by the following features:

***Zercon acanticus* sp. n.**

***Zercon zelawaiensis* SELLNICK, 1944**

- |   |  |
|---|--|
| 1. Seta Z3 more than three times longer than seta Z2.<br>2. Long setae of opistonotum barbed, without hyaline apices.<br>3. Two setae on anterior margin of ventro-anal shield. | 1. Seta Z3 equal to seta Z2.<br>2. Long setae of opistonotum with hyaline apices.<br>3. Four setae on anterior margin of ventro-anal shield. |
|---|--|

**Holotype** ♀: Mongolia, Central aimak: Ulan-Baator, Nucht im Bogdo ul, 12 km SO vom Zentrum, 1500 m, 12. VI. 1964 (Nr. 123), leg. Z. KASZAB. — **Paratypes**: Central aimak: Ulan-Baator, Nucht im Bogdo ul, 12 km SO vom Zentrum, 1600 m, 22. VII. 1965 (Nr. 295), 1 ♀; Ulan-Baator, Zaisan im Bogdo ul, 5 km S vom Zentrum, 1600 m, 6. VI. 1966 (Nr. 501), 1 ♂; Nucht im Bogdo ul, 12 km SO vom Zentrum, 1650 m, 3. VI. 1967 (Nr. 760), 2 ♀♀; Bogdo ul, Bugijn až achuj, 1650 m, 10. VI. 1968 (Nr. 941), 1 ♀.

***Zercon mongolicus* sp. n.**

**Description of holotype.** Female. Length 514  $\mu$ m, width 430  $\mu$ m. Dorsal side (Fig. 7). Setae: On podonotum in row i only seta i1 long (40  $\mu$ m) and delicately barbed, remaining setae of this row short and smooth. In rows z and s all setae smooth and short. All six setae of marginal row delicately feathered. Opistonotum with setae I1—I3 short and smooth. Seta I4 longer, delicately plumose, and not reaching insertion of seta I5. Seta I5 elongately feathered and reaching beyond posterior margin of opistonotum. Setae I6 similar to I5, removed 150  $\mu$ m from each other. Setae Z1 and Z2 short and smooth, similar to setae I1—I3. Seta Z3 long, feathered and not reaching base of seta Z4. Seta Z4 similar to seta I6. Seta Z5 short and smooth, a distance of 25  $\mu$ m between setae Z5 and I6. Seta S1 delicately feathered, shortest one in this row and not reaching margin of opistonotum. Seta S2 elongately feathered and reaching by half its length beyond margin of opistonotum. Setae S3 and S4 long and barbed. Marginal setae of opistonotum delicately feathered, similar in length to marginal setae of podonotum. Lengths of setae of opistonotum and distances between setae of the single rows in  $\mu$ m as follows:



S1 — 39	Z1 — 22	I1 — 22
68	53	55
S2 — 51	Z2 — 16	I2 — 22
58	39	49
S3 — 64	Z3 — 51	I3 — 22
55	70	43
S4 — 68	Z4 — 80	I4 — 33
	58	49
	Z5 — 27	I5 — 57
		45
		I6 — 78

**Pores.** Opistonotal pore Po1 situated on line connecting setae Z1 and z2. Pore Po2 below line connecting setae Z2—S2. Pore Po3 directly on line connecting setae Z4—I5, over outside dorsal cavities.

**Sculpture.** Entire podonotum with an irregular tile-like sculpture. Opistonotal tile-like sculpture reaching to base of seta Z3. Remaining part of opistonotum covered with delicate and small spots. Dorsal cavities distinct and well sclerotized, with axes parallel to body axis.

**Ventral side.** Chaetotaxy and shape of peritremal shield typical of *Zercon* C. L. KOCH. Adgenital shields present. Four setae on anterior margin of ventro-anal shield.

**Systematic position.** This species resembles *Zercon asaphus* BŁASZAK, 1976, from which it differs by the following features:

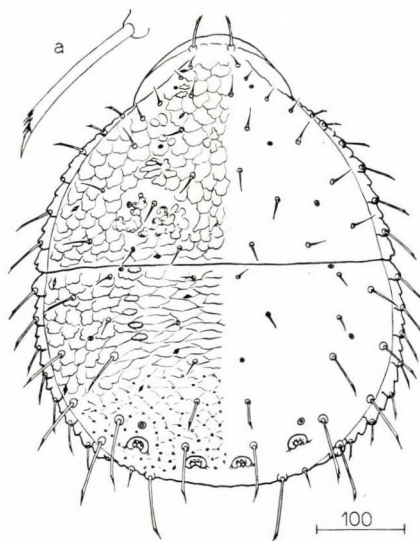


Fig. 7. *Zercon mongolicus* sp. n., dorsal side ♀; seta I6 (a)

**Zercon mongolicus** sp. n.

1. Seta Z2 present.
2. Pore Po2 situated below line connecting setae Z2—S2.
3. Pore Po3 situated on line connecting setae Z4—I5, over outside dorsal cavities.
4. Setae S3, S4, Z3, Z4, I6 apically feathered.

**Zercon asaphus** BLASZAK, 1976

1. Seta Z2 absent.
2. Pore Po2 situated between setae Z1 and Z3.
3. Pore Po3 situated inside of line connecting setae Z3 and Z4, near seta Z4 (removed from it by 3 diameters).
4. Setae S3, S4, Z3, Z4, I6 with delicately hyaline apices.

Holotype ♀: Mongolia, Central aimak: SO von Somon Bajancogt, 1600 m, 4. VII. 1964 (Nr. 266), leg. Z. KASZAB. — Paratypes: Nr. 266, 17 ♀♀; Ulan-Baator, Nucht im Bogdo ul, 12 km SO vom Zentrum, 1500 m, 12. VI. 1964 (Nr. 123), 3 ♀♀; *ibid.*, 1650 m, 3. VI. 1967 (Nr. 760), 1 ♀; SO von Somon Bajancogt, 1600 m, 4. VII. 1964 (Nr. 269), 1 ♀; *ibid.*, 13. VI. 1968 (Nr. 947), 20 ♀♀; Tosgoni ovoo, 6—10 km N von Ulan-Baator, 1700 m, 4.—8. VI. 1968 (Nr. 936), 52 ♀♀; Bogdo ul, Bugijn až achuj, 1650 m, 10. VI. 1968 (Nr. 941), 1 ♀.

**Zercon amidrytus** sp. n.

**Description of holotype.** Male. Length 405  $\mu$ m, width 300  $\mu$ m. Dorsal side (Fig. 8). Setae: Podonotal setae i1—i2, s1—s6 and marginal setae delicately feathered. Remaining setae of podonotum smooth. Opistonotal setae I1—I5 short and smooth. Setae I6 feathered and removed 109  $\mu$ m from each other. Setae Z1 and Z2 short and smooth. Seta Z3 similar to I6 and reaching insertion of seta Z4. Seta Z4 long and feathered. Seta Z5 finely feathered, similar to marginal setae of podo- and opistonota. Distance 23  $\mu$ m between seta Z5 and I6. Setae S1—S4 long and feathered. Seta S1 reaching almost margin of opistonotum. Seta S2 reaching by almost half its length beyond margin of opistonotum. Marginal setae of opistonotum delicately feathered. Lengths of setae of opistonotum and distances between setae of single rows in  $\mu$ m as follows:

S1 — 33	Z1 — 19	I1 — 16
45	39	45
S2 — 45	Z2 — 19	I2 — 16
45	29	33
S3 — 50	Z3 — 45	I3 — 16
45	58	33
S4 — 64	Z4 — 64	I4 — 16
	43	29
	Z5 — 41	I5 — 14
		49
		I6 — 74

**Pores.** Pore Po2 situated on line connecting setae Z2 and S2. Pore Po3 on line connecting setae Z3 and Z4, near Z4.

**Sculpture.** Entire podonotum with an irregular tile-like sculpture. Opistonotum also with a tile-like sculpture, yet obsolescent posteriorad. Dorsal cavities distinct and well sclerotized, with axes parallel to body axis.

**Ventral side.** Chaetotaxy and shape of peritremal shield typical of *Zercon* C. L. KOCH. Adgenital shields present. Four setae on anterior margin of ventro-anal shield.



*Deutonymph*. Length 450  $\mu\text{m}$ , width 234  $\mu\text{m}$  (Fig. 9).

Podonotum with all setae delicately feathered. Opistonotal setae I1—I5, Z1—Z2 short and smooth. Long opistonotal setae S1—S4, Z4—Z5 and I6 feathered. Seta S1 reaching to margin of opistonotum. Marginal setae of opistonotum finely feathered. A distance of 107  $\mu\text{m}$  between setae I6. Lengths of setae of opistonotum and distances between setae of single rows in  $\mu\text{m}$  as follows:

S1 — 39	Z1 — 16	I1 — 13
45	47	45
S2 — 55	Z2 — 10	12 — 13
45	33	37
S3 — 62	Z3 — ?	13 — 10
43	48	33
S4 — 70	Z4 — 78	14 — 10
	41	35
	Z5 — 40	15 — 10
		43
		I6 — 83

The position of the pores on the opistonotum is the same as in the male. The sculpture of the podo- and opistonota is similar, but less discernible. On the anterior margin of the ventro-anal shield, there are four setae. The dorsal cavities have axes parallel to the body axis.

**Systematic position.** This species resembles *Zercon cazorlensis* ATHIAS-HENRIOT, 1961, from which it differs by the following features:

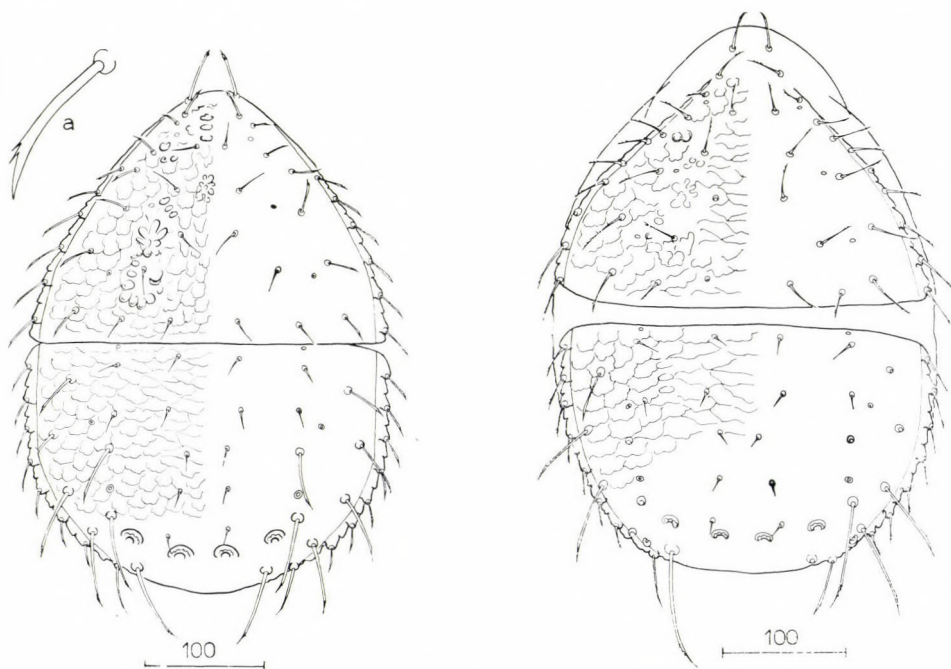


Fig. 8. *Zercon amidrytus* sp. n., dorsal side ♂; seta I6 (a)  
Fig. 9. *Zercon amidrytus* sp. n., dorsal side of deutonymph

**Zercon amidrytus** sp. n.

1. Seta S1 and Z3 feathered.
2. Setae S2—S4, Z4 and I6 feathered.
3. Seta I5 equal to seta I1.

**Zercon cazorlensis** ATHIAS-HENRIOT, 1961

1. Seta S1 and Z3 smooth.
2. Setae S2—S4, Z4 and I6 with hyaline apices.
3. Seta I5 twice shorter than seta I1.

Holotype ♂, paratype 1 ♂, 1 deutonymph: Mongolia, Central aimak: Tosgoni ovoo, 6—10 km N von Ulan-Baator, 1700 m, 4.—5. VI. 1968 (Nr. 936), leg. Z. KASZAB.

**Zercon amphibolus** sp. n.

**Description of holotype.** Male. Length 370  $\mu$ m, width 330  $\mu$ m. Dorsal side (Fig. 10). Setae: Podonotal setae i1—i3, s4—s6 and r3—r6 finely feathered. Remaining setae of podonotum smooth. Opistonotal setae I1—I5 short and smooth. Setae I6 feathered and removed 113  $\mu$ m from each other. Setae Z1 and Z2 short and smooth. Seta Z3 feathered and reaching base of seta Z4. Seta Z4 similar to seta I6. Seta Z5 finely feathered. A distance of 17  $\mu$ m between seta Z5 and I6. Seta S1 feathered not reaching insertion of seta S2. Seta S2 long and feathered, reaching by half its length beyond margin of opistonotum. Setae S3—S4 similar to seta I6. Lengths of setae of opistonotum and distances between setae of single rows in  $\mu$ m as follows:

S1 — 29	Z1 — 16	I1 — 19
40	37	39
S2 — 43	Z2 — 16	I2 — 19
48	29	39
S3 — 54	Z3 — 43	I3 — 14
45	45	33
S4 — 58	Z4 — 64	I4 — 14
	51	39
	Z5 — 37	I5 — 16
		39
		I6 — 72

**Pores.** Pore Po1 situated on line connecting setae z2—Z1. Pore Po2 below line connecting setae Z2 and S2. Pore Po3 on line connecting setae Z4 and I4, and removed from Z4 by almost twice its diameter.

**Sculpture.** Entire podonotum with an irregular tile-like sculpture. Opistonotal sculpture tile-like in upper corners, reticulated in middle of front part. Remaining part of opistonotum covered with distinct spots. Dorsal cavities distinct, with axes parallel to body axis.

**Ventral side.** Chaetotaxy and shape of peritremal shield typical of *Zercon* C. L. KOCH. Adgenital shields present. Two setae on anterior margin of ventro-anal shield.

**Deutonymph.** Length 370  $\mu$ m, width 260  $\mu$ m (Fig. 11). Podonotal setae i1, r3, r6 and s4 finely feathered. Remaining setae of podonotum smooth. Opistonotal setae I1—I5 short and smooth. Seta I6 elongately feathered and



removed 97  $\mu\text{m}$  from each other. Setae Z1—Z2 short and smooth. Seta Z3 feathered and reaching to base of seta Z4. Seta Z4 similar to I6. A distance of 19  $\mu\text{m}$  between seta Z5 and I6. Setae S1 not reaching insertion of seta S2. Setae S2—S4 long, similar to seta I6. Setae R1—R2 finely feathered, remaining setae of this row short and smooth. Lengths of setae of opistonotum and distances between setae of single rows in  $\mu\text{m}$  as follows:

S1 — 29	Z1 — 10	I1 — 16
41	37	29
S2 — 49	Z2 — 10	12 — 12
41	23	33
S3 — 58	Z3 — 55	13 — 10
41	45	23
S4 — 66	Z4 — 74	14 — 10
	37	29
	Z5 — 29	15 — 10
		31
		16 — 74

Pore Po1 situated above insertion of seta Z1. Pore Po2 on line connecting setae S2—Z2. Pore Po3 on line connecting setae Z4 and I4, removed from Z4 by twice its diameter. Sculpture of podo- and opistonota similar, but less distinct than in male. Dorsal cavities lobed frontally. Two setae on anterior margin of ventro-anal shield.

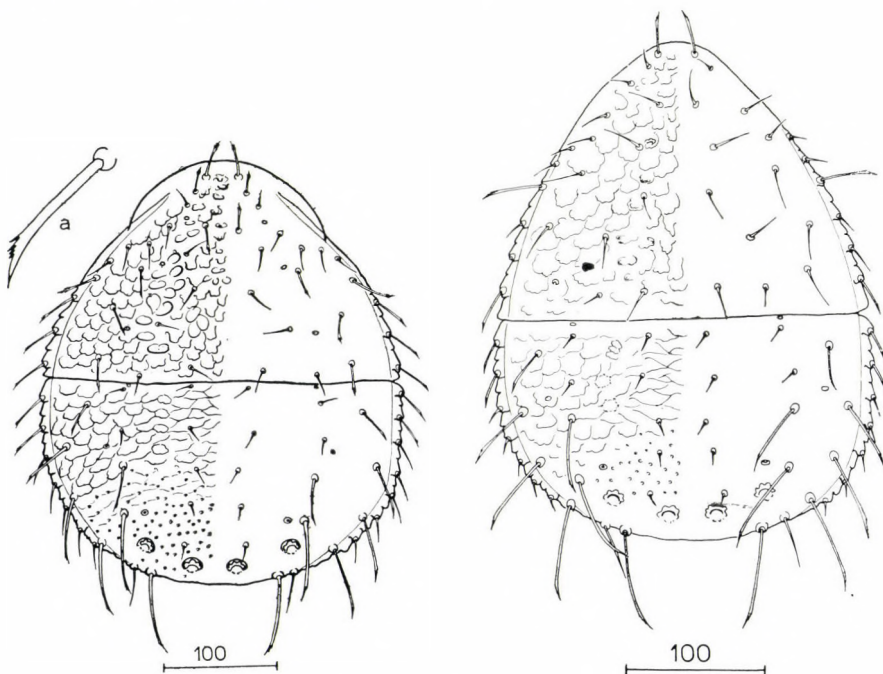


Fig. 10. *Zercon amphibolus* sp. n., dorsal side ♂; seta I6 (a)  
Fig. 11. *Zercon amphibolus* sp. n., dorsal side of deutonymph

**Systematic position.** This species resembles *Zercon inornatus* WILLMANN, 1943, from which it differs by the following features:

***Zercon amphibolus* sp. n.**

1. Seta Z1 twice shorter than seta S1.
2. Seta S2 elongately feathered, reaches by half its length beyond margin of opistonotum.
3. Setae I5 situated before inner dorsal cavities.
4. Seta Z3 reaching base of seta Z4.

***Zercon inornatus* WILLMANN, 1943**

1. Seta Z1 equal to seta S1.
2. Seta S2 short and smooth, not reaching margin of opistonotum.
3. Setae I5 situated between inner and outer dorsal cavities.
4. Seta Z3 not reaching base of seta Z4.

Holotype ♂: Mongolia, Central aimak: 11 km SO von Somon Bajancogt, 1600 m, 13. VI. 1968 (Nr. 947), leg. Z. KASZAB. — Paratypes: Nr. 947, 9 ♂♂; Ulan-Baator, Nucht im Bogdo ul, 12 km SO vom Zentrum, 1500 m, 12. VI. 1964 (Nr. 123), 1 deutonymph; SO von Somon Bajancogt, 1600 m, 4. VII. 1964 (Nr. 266), 2 ♂♂, 1 deutonymph; Tosgoni ovoo, 6—10 km N von Ulan-Baator, 1700 m, 4.—8. VI. 1968 (Nr. 936), 13 ♂♂, 2 deutonymphs; Bogdo ul, Bugijn až achuj, 1650 m, 10. VI. 1968 (Nr. 941), 1 ♂.

***Zercon comaliatus* sp. n.**

**Description of holotype.** Female. Length 490  $\mu$ m, width 345  $\mu$ m. Dorsal side (Fig. 12). Setae: Podonotal setae i1 feathered, setae s1—s6 and marginal setae of podonotum delicately barbed, remaining setae of podonotum smooth. Opistonotal setae I1—I3 short and smooth, I4—I5 longer and finely barbed. Setae I6 barbed, with hyaline apices, and removed 100  $\mu$ m from each other. Setae Z1 and Z2 short and smooth. Seta Z3 similar to I6 and reaching almost to insertion of seta Z4. Seta Z4 also similar to I6. Seta Z5 delicately barbed, similar to marginal setae of podo- and opistonota. A distance of 27  $\mu$ m between seta Z5 and I6. Setae S1—S4 similar in shape to seta I6. Seta S1 reaching as far as half distance to S2. Seta S2 reaching margin of opistonotum. Marginal setae of opistonotum delicately barbed. Lengths of setae of opistonotum and distances between setae of single rows in  $\mu$ m as follows:

S1 — 29	Z1 — 18	I1 — 18
58	49	57
S2 — 37	Z2 — 18	I2 — 18
72	55	42
S3 — 45	Z3 — 45	I3 — 18
44	48	37
S4 — 55	Z4 — 57	I4 — 23
	60	45
	Z5 — 31	I5 — 23
		45
		I6 — 59

**Pores.** Pore Po1 situated above insertion of seta Z1. Pore Po2 situated outside line connecting insertion of setae Z2—Z3. Pore Po3 appearing under line connecting insertions of setae Z4 and I4.



**Sculpture.** Entire podonotum with an irregular tile-like sculpture. Opistonotal tile-like sculpture reaching to base of seta I4. Remaining part of opistonotum smooth. Dorsal cavities distinct and well sclerotized.

**Ventral side.** Chaetotaxy and shape of peritremal shield typical of *Zercon* C. L. KOCH. Adgenital shields present. Four setae on anterior margin of ventro-anal shield.

**Male.** Length 500  $\mu\text{m}$ , width 350  $\mu\text{m}$ .

Setae of podo- and opistonota similar to those in female. Position of pores as in female. Lengths of setae of opistonotum and distances between setae of single rows in  $\mu\text{m}$  as follows:

S1 — 21	Z1 — 20	I1 — 20
58	64	62
S2 — 31	Z2 — 20	12 — 20
58	52	45
S3 — 44	Z3 — 33	I3 — 20
53	39	45
S4 — 48	Z4 — 45	I4 — 20
	48	33
	Z5 — 25	I5 — 23
		39
		I6 — 48

This species is similar to *Zercon pinicola* HALÁŠKOVÁ, 1969, from which it differs by the following features:

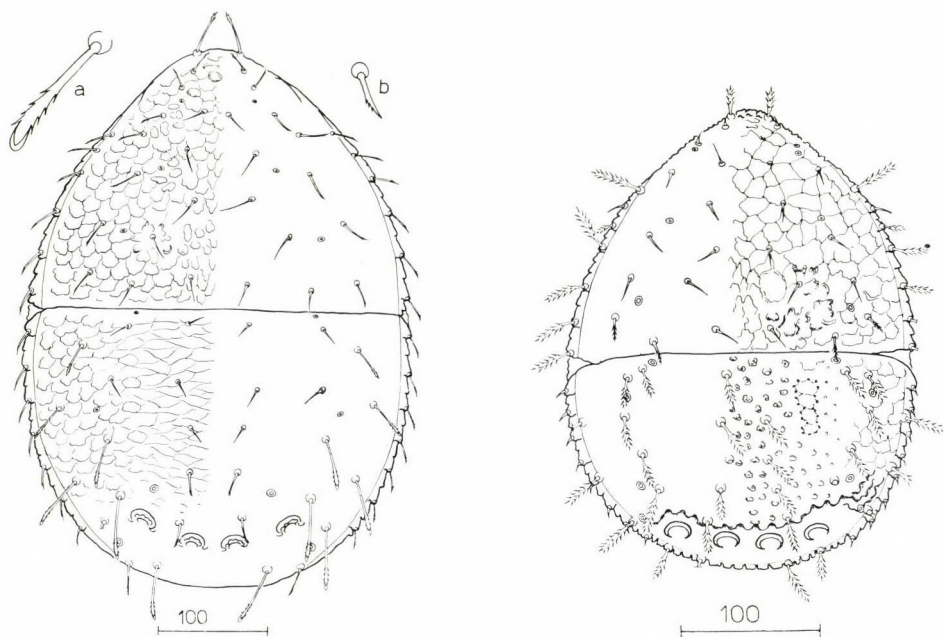


Fig. 12. *Zercon comaliatus* sp. n., dorsal side ♀; seta I6 (a) and seta I5 (b)

Fig. 13. *Prozercon micherdzinskii* sp. n., dorsal side ♀

**Zercon comaliatus** sp. n.

1. Seta S1 with hyaline apex.
2. Seta S2 with hyaline apex and reaching margin of opistonotum.
3. Dorsal cavities very distinct and smooth in front.
4. Posterior part of opistonotum smooth.

**Zercon pinicola** HALAŠKOVÁ, 1969

1. Seta S1 short and smooth.
2. Seta S2 without hyaline apex and not reaching margin of opistonotum.
3. Dorsal cavities stare-like, with lobed prominences.
4. Posterior part of opistonotum covered with distinct spots.

Holotype ♀: Mongolia, Chövsgöl aimak: 6 km WNW von Somon Tosoncengel, 1480 m, 18. VI.—20. VII. 1968 (Nr. 980), leg. Z. KASZAB. — Paratypes: Nr. 980, 1 ♀, 1 ♂. — Central aimak: Bogdo ul, Bagijn až achuj, 1650 m, 10. VI. 1968 (Nr. 941), 1 ♂.

**Prozercon micherdzinskii\*** sp. n.

Description of holotype. Female. Length 330  $\mu$ m, width 260  $\mu$ m. Dorsal side (Fig. 13). Setae: Podonotal seta i1 plumose, remaining setae of this row smooth. Seta z1 smooth, z2 pilose and reaching over posterior margin of podonotum. Row s of setae with only seta s5 pilose, remaining setae smooth. Marginal setae of podonotum plumose, excepting setae r2. Setae r2 short and smooth. Opistonotum with all setae of row I plumose. Setae I1—I5 similar in length. Seta I1 not reaching insertion of seta I2. Apices of setae I2—I4 reaching insertion of next setae. Setae I6 plumose, longer than the five previous ones and removed 68  $\mu$ m from each other. Setae Z1 plumose and situated above line connecting setae S1. Setae Z2—Z5 plumose. Seta Z3 reaching insertion of seta Z4. Seta Z4 reaching margin of opistonotum. A distance of 25  $\mu$ m between seta Z5 and I6. All setae of row S plumose. Seta S1 reaching insertion of seta Z2. Setae S2—S4 similar in length. Lengths of setae of opistonotum and distances between setae of single rows in  $\mu$ m as follows:

S1 — 22	Z1 — 22	I1 — 25
45	37	35
S2 — 33	Z2 — 22	I2 — 25
43	29	25
S3 — 33	Z3 — 22	I3 — 25
43	29	22
S4 — 33	Z4 — 35	I4 — 25
	43	22
	Z5 — 25	I5 — 25
		29
		I6 — 35

Pores. Podonotal pore po1 situated just behind seta s1. Pore po2 appearing above line connecting setae s3—i4. Pore po3 on line connecting setae s6—z1, nearer s6. Opistonotal pore Po1 situated a little obliquely upwards on

\* The species is dedicated to Doc. dr. hab. W. MICHERDZIŃSKI (Kraków).



inner side of insertion of seta Z1. Pore Po2 in middle of a line connecting setae S1—Z2. Pore Po3 appearing on line connecting setae Z4 and S3, removed from Z4 by its diameter. Pore Po4 near seta S4.

**Sculpture.** Entire podonotum with irregular areas. Opistonotum with a tile-like sculpture between row S of setae and margin of opistonotum. Remaining part of opistonotum covered with regular spots: biggest ones between setae of row I. Dorsal cavities big, distinct, with axes parallel to body axis. Dorsal cavities smooth in front.

**Ventral side.** Chaetotaxy and shape of peritremal shield typical of genus *Prozercon* SELLNICK. Adgenital shield and pore gv2 absent. Two setae on anterior margin of ventro-anal shield.

**Systematic position.** This species is closely related to *Prozercon rafalskii* BŁASZAK, 1971, and to *Prozercon fimbriatus* (C. L. KOCH, 1839). It differs from these by numerous features listed below:

***Prozercon micherdzinskii* sp. n.**

1. Seta Z1 nearer to anterior edge of opistonotum than seta S1.
2. Pore Po2 situated on line connecting setae S1—S2.
3. Pore Po3 situated on line connecting setae Z4 and S3 and removed from Z4 by its diameter.

***Pr. rafalskii* BŁASZAK, 1971**

1. Seta S1 twice nearer to anterior edge of opistonotum than seta Z1.
2. Pore Po2 situated on line connecting setae S1—S2.
3. Pore Po3 situated below line connecting setae Z3 and S3.

***Prozercon micherdzinski* sp. n.**

1. Seta S1 long, plumose, reaching insertion of seta Z2.
2. Pore Po3 situated on line connecting setae Z4 and S3, and removed from Z4 by its diameter.

***Pr. fimbriatus* (C. L. KOCH, 1839)**

1. Seta S1 short and smooth.
2. Pore Po3 situated outside of line connecting setae Z3—Z4.

Holotype ♀: Mongolia, Chentey aimak: 20 km SW von Somon Norovlin, 900 m, 20. VIII. 1965 (Nr. 452), leg. Z. KASZAB.

**KEY TO THE GENERA AND SPECIES OF THE MONGOLIAN ZERCONIDAE**

- 1 (2) The peritremal shield extends posteriorly, especially its lateral external end which extends to seta R5. On the peritremal shield, there are two setae, p1 and p2, both short and smooth. The adgenital shields and pore gv2 are absent (*Prozercon* SELLNICK, 1943) ***Prozercon micherdzinskii* sp. n.**
- 2 (1) The peritremal shield terminates truncately posteriorad behind the fourth pair of coxae. On the peritremal shield, there are two setae, p1 — short and smooth, p2 — long and pilose. The adgenital shields are present (*Zercon* C. L. KOCH, 1836).
- 3 (6) On the anterior margin of the ventro-anal shield there are two setae ***Zercon acanticus* sp. n.**
- 4 (5) Pore Po3 lies on the line connecting setae Z3—Z4 ***Zercon amphibolus* sp. n.**
- 5 (4) Pore Po3 lies on the line connecting setae Z4—I4
- 6 (3) On the anterior margin of the ventro-anal shield there are four setae
- 7 (10) Pore Po3 lies on the line connecting setae Z3—Z4.

- 8 (9) Seta I5 equal to seta I1 *Zercon amidrytus* sp. n.  
 9 (8) Seta I5 is at least twice as long as seta I1 *Zercon kaszabi* sp. n.  
 10 (7) Pore Po3 lies between the Z and I rows of setae  
 11 (12) Seta I4 reaches to the base of seta I5 *Zercon mahunkai* sp. n.  
 12 (11) Seta I4 does not reach to the base of seta I5  
 13 (14) Seta S2 reaches to the margin of the opistonotum. Pore Po3 lies on the line connecting setae Z4—I4 *Zercon comaliatus* sp. n.  
 14 (13) Seta S2 reaches by half of its length beyond the margin of the opistonotum. Pore Po3 lies on the line connecting setae Z4—I5  
 15 (16) Seta I5 equal to seta I1 *Zercon adoxellus* sp. n.  
 16 (15) Seta I5 is at least twice as long as seta I1 *Zercon mongolicus* sp. n.

The type specimens are deposited in the collection of the Hungarian Natural History Museum (Budapest).

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## DIE BEDEUTUNG ZWEIER ENCHYTRAEIDEN-ARTEN BEI DER ZERSETZUNG VON HAINBUCHENSTREU IN MESOPHILEN LAUBWÄLDERN UNGARNS\*

Von

K. DÓZSA-FARKAS

(Eingegangen am 30. November 1977)

A study of the participation of two Enchytraeid species [*Fridericia galba* (HOFFMEISTER, 1843) and *F. ratzeli* (EISEN, 1872)] in the litter decomposition of hornbeam-oakwood forest stands. Results of consumption experiments (based on the litter ingestion values of divers months: August 1975—April 1977) and the individual as well as biomass values of the two species in the sample area revealed the percentual consumption of the total hornbeam litter in the given hornbeam-oakwood forest by the two Enchytraeid species.

Innerhalb der sich auf verschiedene Bodentiergruppen erstreckenden produktionsbiologischen Untersuchungen in zwei Hainbuchen-Eichenbeständen Ungarns (Cserhát—Vértes-Projekt) befasste ich mich seit mehreren Jahren mit der Erkundung der Enchytraiden-Fauna dieser Bestände (DÓZSA-FARKAS, 1978a, b). Anhand meiner strukturzöologische Aufnahmen konnte bisher festgestellt werden, daß von den großkörperigen, streuzersetzenden Enchytraiden-Arten im Untersuchungsbestand des Cserhát-Gebirges die Art *Fridericia galba* (HOFFMEISTER, 1843) mit 8 Divertikeln dominiert, im Untersuchungsbestand des Vértes-Gebirges *Fridericia ratzeli* (EISEN, 1872). Im letztgenannten Bestand kommt auch die andere Art vereinzelt vor.

Da den Enchytraiden im Stoffumsatz verschiedener Waldbestände in der einschlägigen Literatur (SCHAEFFENBERG, 1950, ZACHARIAE, 1964, 1965) eine umstrittene Bedeutung zugemessen wird und ich durch die Ergebnisse meiner vorausgehenden Fütterungsversuche (DÓZSA-FARKAS, 1976, 1978b) hingegen eindeutig die Beteiligung einiger Arten an der Zersetzung der Laubstreu nachweisen konnte, ergab sich die Zielsetzung, die Rolle dieser beiden Arten bei der Zersetzung von Hainbuchenstreu eingehend zu verfolgen. Es handelt sich um langfristige Fütterungsversuche, die von September 1975 bis Mai 1977 den Konsum dieser Tiere mit monatlichem Wechsel des im Freien entsprechenden Nahrungsangebotes verfolgt. Die Ergebnisse dieser Fütterungsversuche ermöglichen — in Kenntnis der Abundanzwerte der Arten beider Versuchsbestände — Ermittlungen über die unter natürlichen Verhältnissen verlaufende Fraßtätigkeit dieser Tiere zu liefern.

\* Durchgeführt im Rahmen des MAB-Programmes (MAB-Report Ser. No. 41, 1977): »Cserhát—Vértes Projekt« sowie des RGW-Programmes (Problem No. III/1).



**Untersuchungsmethode.** Die strukturzöologische Untersuchungen wurden mit Hilfe eines Stechzylinders ( $\emptyset$  5,05 cm = 20 cm<sup>2</sup>) durchgeführt (DÓZSA-FARKAS, 1973). Es wurden monatlich je 20 Bohrkern von 5 cm Höhe entnommen. Die taxonomische Bearbeitung des Materials erbrachte im Cserhát-Gebirge den Nachweis von 13, im Vértes-Gebirge von 15 Arten. Im weiteren werden an dieser Stelle nur die Arten *F. galba* und *F. ratzei* berücksichtigt, da sich vorläufig die Fütterungsversuche nur auf diese Arten erstrecken.

Die Proben des Untersuchungsbestandes aus dem Cserhát-Gebirge sind, den monatlichen Aufnahmen folgend, laufend bearbeitet worden, so daß die populationsdynamischen Verhältnisse (Abundanz, Zoomasse) der Art *F. galba*, den Ergebnissen der Fütterungsversuche entsprechend, für Berechnungen der Fraßtätigkeit im Freien in monatlichen Abständen zur Verfügung stehen.

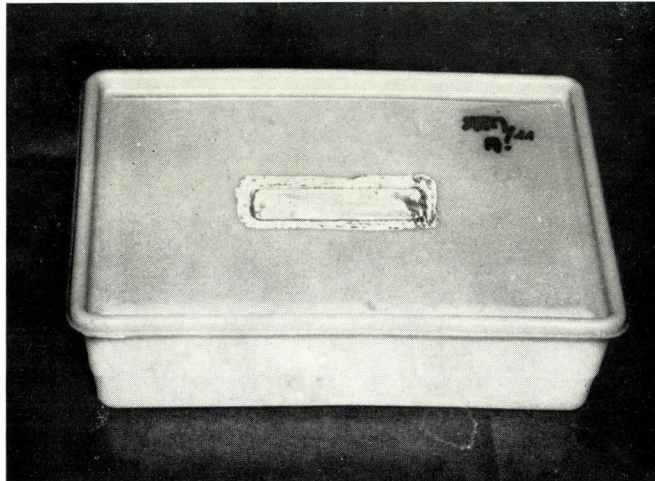


Abb. 1. Plastikdose mit Drahtnetzdeckel

Aus dem Untersuchungsbestand des Vértes-Gebirges wurden nur die Proben gewisser Monate (November 1976—März 1977) herausgegriffen und bearbeitet. Da die Werte der Individuendichte und Zoomasse innerhalb der einzelnen Monate nur unwesentlichen Schwankungen unterliegen, wurden für die fehlenden Monate zur Bestimmung des im Freien berechneten Konsums Durchschnittswerte genommen. Bei den Berechnungen der Jahresgesamt-Konsummenge, werden bei *F. ratzei* die Monate Mai bis Oktober nicht berücksichtigt, da sich die Art in dieser Zeitspanne, unabhängig von der Gestaltung der klimatischen Verhältnisse, nicht in der Streuschicht, bzw. in der oberen Bodenschicht aufhält und so auch an der Zersetzung der Streuschicht nicht teilnimmt.

Für langfristige Fütterungsversuche erwiesen sich die Verhältnisse — wie dies öfters bei Lumbriciden (ZICSI, 1972, 1978, ZICSI und POBOZSNY, 1977) erwähnt wurde — im Höhlenbiologischen Laboratorium von Aggtelek am günstigsten. In dieser großräumigen Klimakammer herrscht nahezu 100% relative Luftfeuchtigkeit und eine ständige Temperatur von 10 °C.

Für die jetzigen Fütterungsversuche wurden, abweichend von der bisherigen Untersuchungsmethode (DÓZSA-FARKAS, 1976, 1978b) 19 × 14 × 5 cm große Plastikgefäße mit gut verschließenden Deckeln angewandt. In die Deckel wurden 6 × 2 cm große Öffnungen geschnitten, welche wiederum mit einem dichten Kupfernetz verklebt wurden, wodurch die Luftzufuhr der Gefäße gesichert war (Abb. 1). Die Plastikgefäße erhielten Boden aus dem Cserhát-Gebirge (obere Schicht eines lessivierten Braunen-Waldbodens), aus dem vorher gröbere organische Teile sorgfältig ausgelesen worden waren. Auf die angefeuchteten Böden in den Plastikgefäßen wurden von *F. galba* je 200 Exemplare, von *F. ratzei* je 100 Exemplare mit vorher bestimmtem Gewicht untergebracht. Die Tiere zogen sich in kurzer Zeit in die Versuchsböden zurück. Als Futter erhielten die Tiere Hainbuchenblätter, die regelmäßig monatlich vom September 1975 bis Mai 1977 im Versuchsbestand des Cserhát-Gebirges gesammelt wurden. Da die Blätter

immer am Anfang, d. h. in den ersten Tagen jedes Monates gesammelt wurden, spiegeln sie den Rottezustand des vorausgehenden Monates wider.

Von den lufttrocken aufbewahrten Blättern wurde monatlich je 1 g pro einzelnen Versuch — nach entsprechender Befeuchtung — als Futter angeboten, die nach einmonatiger Versuchsdauer wieder in lufttrocknem Zustand zurückgewogen wurden. Jeder Versuch wurde in 3 Wiederholungen durchgeführt, in ebenfalls drei Parallelen wurde unter gleichen Verhältnissen die gleiche Menge an Hainbuchenblättern als Kontroll-Versuch ohne Enchytraeiden angelegt. Bei der Berechnung des Konsums der beiden Arten wurde der in den Kontroll-Versuchen nachweisbare Gewichtsschwund der Blätter mit Hilfe der Formel nach REIMAN (ZICSI und POBOZSNY, 1977) mit in Betracht gezogen und korrigiert.

**Ergebnisse.** Ergebnisse vorausgehender Präferenz-Untersuchungen (DÓZSA-FARKAS, 1978b) zeigten, daß leichtzersetzliche Blattarten (Linde, Esche, Ahorn) nach dem Laubfall — bei gleichzeitigem Angebot — der Hainbuche gegenüber bevorzugt werden. Die Versuche des Jahres 1976/77 erbrachten jedoch den Nachweis, daß die Hainbuche bereits im November angefressen wird. Da in Hainbuchen-Eichenbeständen die oben erwähnten Baumarten wie Linde, Esche und Ahorn nur vereinzelt vorkommen oder aber auch gänzlich fehlen können, steht in der kontinuierlichen Nahrungsversorgung der Tiere dieser Bestände die Hainbuchenstreu an erster Stelle. Die vorliegenden Fütterungsversuche bezweckten also festzustellen, wie sich die Menge des Konsums von der Hainbuchenstreu, dem Laubfall folgend, in den einzelnen Monaten gestaltet und welche Einfluß die klimatischen Faktoren auf die Fraßintensität ausüben.

Wie vorausgehend erwähnt, erhielten die Versuchstiere dem Rottezustand im Freien entsprechende, monatlich gesammelte Hainbuchenstreu. Die Ergebnisse der Konsummenge (berechnet in mg/Tag auf 1 g Lebendgewicht) werden auf Abb. 2 und 3 veranschaulicht.

*F. galba* verzehrt, dem fortgeschritteneren Rottezustand entsprechend, stets größere Mengen in den aufeinanderfolgenden Monaten (Abb. 2). Interessant gestaltet sich jedoch der Konsum im Vergleich derselben Perioden verschiedener Jahre. Im ersten Jahr, also 1975 rührten die Tiere die Blätter einschließlich Oktober nicht an, während 1976 bereits im August Konsum-Werte festgestellt werden konnten, die einen laufenden Anstieg bis November aufwiesen. Die ersten höheren Konsume wurden 1975 im April erzielt (11,88 mg/Tag), während 1976 diese bereits im Februar erreicht und überschritten wurden (15,85 mg/Tag). In beiden Jahren läßt sich ein plötzlicher Rückfall in der Fraßmenge beobachten, u. zw. im Dezember und Juni 1975/76 und im Januar 1977. Da dies in den 3 Parallelen konstant vorkam, muß angenommen werden, daß in den Blattsubstanzen sich solche chemische Veränderungen vorübergehend vollzogen, die ein Ablehnen der Nahrung verursachte.

Zusammenfassend kann jedoch festgestellt werden, daß die klimatischen Verhältnisse des Jahres 1976/77 sich auf den Rottezustand der Hainbuchenstreu günstiger auswirkten als 1975/76. Die vergleichbare Zeitspanne, also von August bis April beider Jahre, erbrachte im Durchschnitt des Konsums das 2,2-fache zu Gunsten des Jahres 1976/77.



Ähnlich gestaltete sich der Konsum auch bei *F. ratzei* (Abb. 3), jedoch mit dem eindeutigen Unterschied, daß hier die Konsummengen höher liegen. Rückgänge in der Fraßmenge waren ebenfalls zu beobachten, u. zw. im Juni 1976 und Januar 1977, also zur selben Zeit wie bei *F. galba*. Im Dezember 1975 ist zwar kein Rückfall im Konsum dem vorausgehenden Monat gegenüber zu vermerken, die Konsumwerte liegen aber auch nicht höher als bei *F. galba*. Dieser Umstand unterstützt die vorher erörterte Vermutung. Ein weiterer

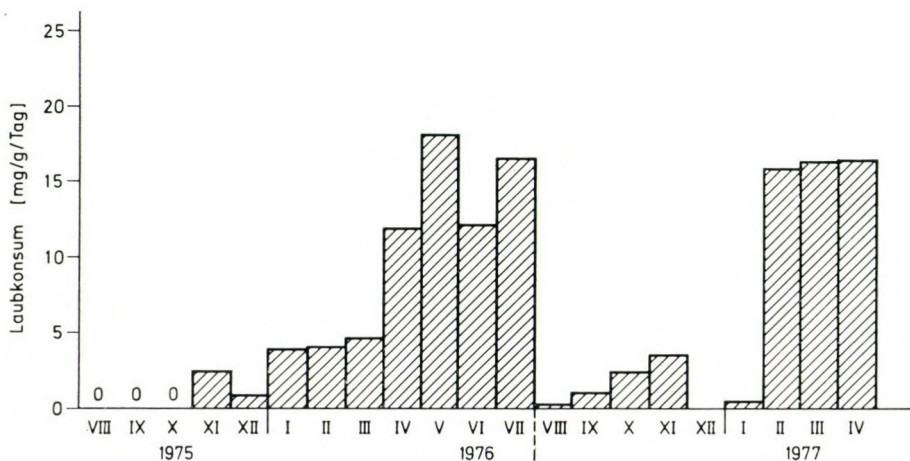


Abb. 2. Hainbuchenstreu-Konsum von *Fridericia galba* in mg/Tag auf 1 g Lebendgewicht berechnet

Unterschied zwischen den beiden Arten sind die hohen Konsumwerte von *F. ratzei* im Februar und November 1976.

Auch für *F. ratzei* erwies sich der Rottevorgang in der Hainbuchenstreu für den Konsum nach dem Laubfall im Jahre 1976/77 günstiger als 1975/76. Ganz extrem sind die Unterschiede der Monate November, wo 1976 das 36,6-fache der Menge konsumiert wurde wie 1975. Die ersten höheren Konsummengen wurden auch bei *F. ratzei* 1975 im April (22,08 mg/Tag) erreicht, während 1976 diese bereits im Februar (20,53 mg/Tag) vermerkt werden konnten. Der Konsum-Durchschnitt von 9 Monaten (August—April) ist bei *F. ratzei* im zweiten Jahr um das 2,8-fache höher als im vorausgehenden Jahr.

Die Unterschiede in der Konsummenge weisen bei beiden Arten mit den Niederschlag-Verhältnissen der beiden Jahre eine enge Korrelation auf (Tab. 1).

Vom Herbst bis zum Frühjahr der Jahre 1976/77 war die Menge der Niederschläge bedeutend höher als 1975/76, wodurch die Rotteprozesse beschleunigt wurden und so den Konsum der Hainbuchenstreu günstig beeinflussten. Eine ähnliche Beeinflussung der Konsummengen konnte auch ZICSI (1978) bei Regenwürmern nachweisen, wo die Ergebnisse der Fütterungsver-

suche 1974/75 und 1975/76 gegenübergestellt wurden. Durch die klimatisch günstigeren Verhältnisse im Jahre 1974/75 lag der Konsum im Durchschnitt bei den einzelnen Arten um das 2,1—3,6-fache höher als im Jahr 1975/76. Ähnlich wie bei den Enchytraeiden wurde 1975/76 die Hainbuchenstreu von *L. polyphemus* (Fitz., 1833) und *D. platyura platyura* (Fitz., 1833) erst im April in größeren Mengen verzehrt, während in anderen Jahren ähnliche Konsummengen bereits im November erzielt werden konnten.

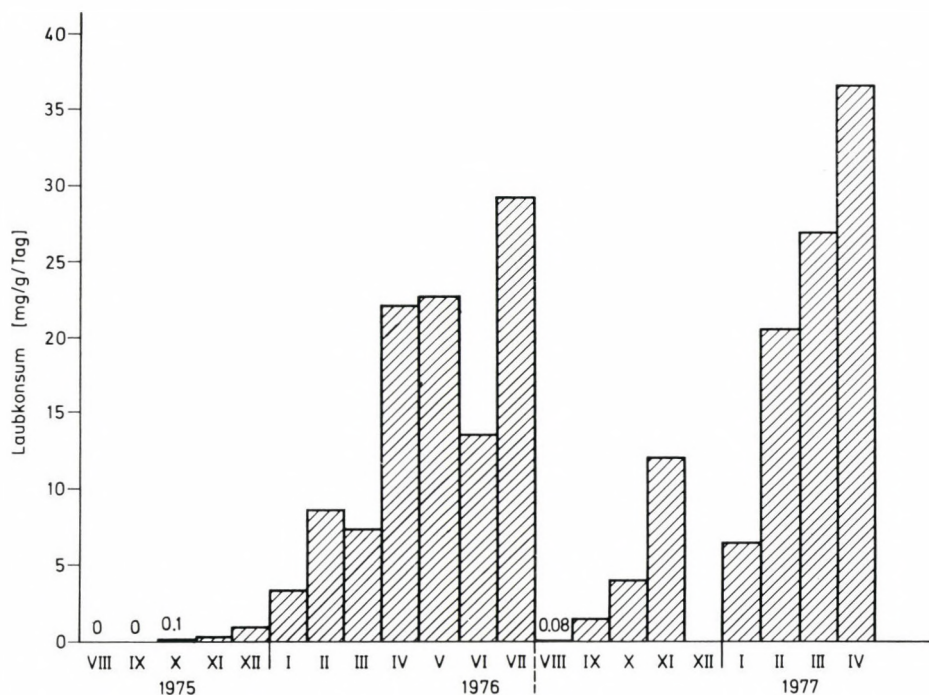


Abb. 3. Hainbuchenstreu-Konsum von *Fridericia ratzeli* in mg/Tag auf 1 g Lebendgewicht berechnet

Tabelle 1

Gestaltung der Niederschlag-Verhältnisse  
im Bestand des Cserhát-Gebirges (mm)

Monate	1975/76	1976/77
Herbst (IX—XI)	132,5	242,9
Winter (XII—II)	120,4	270,9
Frühjahr (III—V)	99,9	161,8
Sommer (VI—VIII)	151,8	135,2



Aufgrund der erzielten Fütterungsergebnisse läßt sich — wie bereits erwähnt — mit Hilfe der in den Beständen festgelegten Abundanz und Zoomasse-Werten auch der Anteil der beiden Arten an den Zersetzungsprozessen unter natürlichen Verhältnissen errechnen. Bei der Berechnung des Konsums im Freien wurden im Winter die schneelosen Frosttage, im Sommer die Trockenperioden, wo die Tiere am Konsum verhindert sind, unberücksichtigt gelassen.

Die Werte der Abundanz und Zoomasse von *F. galba* sind aus dem Bestand des Cserhát-Gebirges, den monatlichen Aufnahmen entsprechend, auf Abb. 4 zusammengefaßt. Die Angaben von *F. ratzei* und *F. galba* aus dem Bestand des Vértes-Gebirges, wo — wie bereits erwähnt — mit Durchschnittswerten gerechnet wurden, werden in Tabelle 3 angeführt.

Die für den Bestand im Cserhát-Gebirge errechneten Werte des Streukonsums von *F. galba* fasse ich in Tabelle 2 zusammen, während die des Bestandes im Vértes-Gebirge, wo *F. ratzei* und *F. galba* gemeinsam an der Zersetzung der Hainbuchenstreu tätig sind, Tabelle 3 enthält.

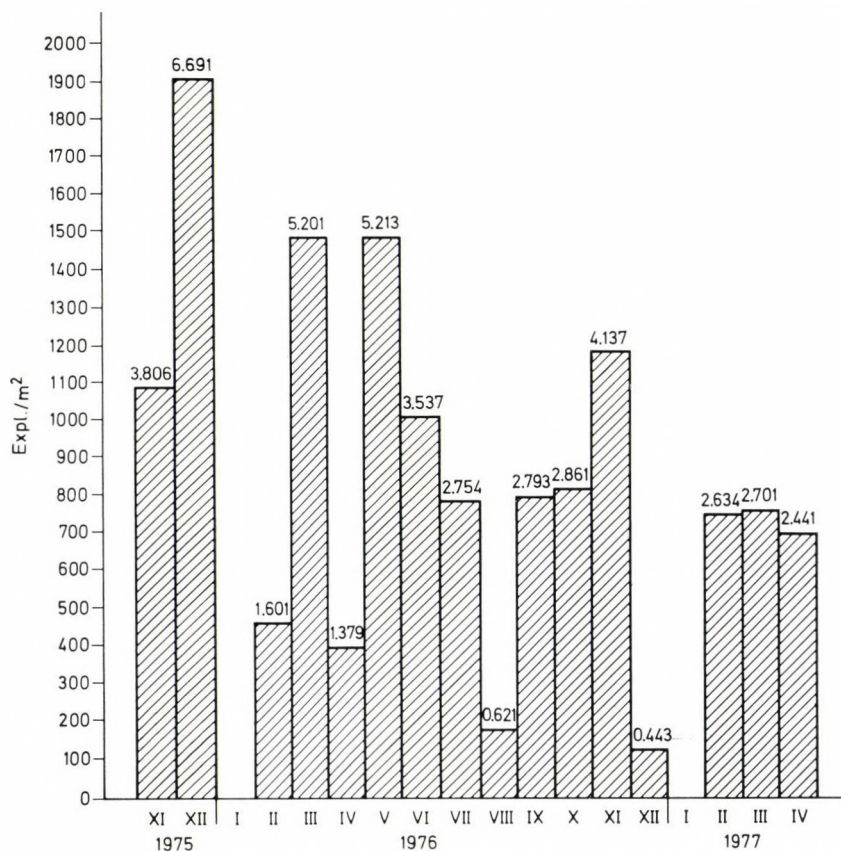


Abb. 4. Werte der Abundanz und Zoomasse von *F. galba* im Hainbuchen-Eichenbestand des Cserhát-Gebirges (oberhalb der Kolumne Angaben in g)

**Tabelle 2**

*Monatlich berechneter Konsum von F. galba  
im Waldbestand des Cserhát-Gebirges (mg/m<sup>2</sup>)*

Monat	1975/76	1976/77
August	Ø	2,3
September	Ø	76,2
Oktober	Ø	210,2
November	284,3	430,7
Dezember	113,7	47,7
Januar	806,9	3,4
Februar	25,7	1001,8
März	675,7	1114,8
April	491,4	1194,3
Insgesamt	2397,8	4081,4

**Tabelle 3**

*Monatlich berechneter Konsum von F. ratzei und F. galba  
im Waldbestand des Vértes-Gebirges (mg/m<sup>2</sup>)*

Durchschnittliche Werte der Zoomasse:

*F. ratzei* 3,236 g/m<sup>2</sup>      *F. galba* 0,117 g/m<sup>2</sup>

Monat	<i>F. ratzei</i>		<i>F. galba</i>	
	1975/76	1976/77	1975/76	1976/77
August	Ø	Ø	Ø	Ø
September	Ø	134,9	Ø	3,2
Oktober	10,0	399,2	Ø	8,6
November	32,0	1 173,7	8,8	12,2
Dezember	60,2	1 212,8	3,0	12,6
Januar	333,0	647,0	14,2	0,9
Februar	252,2	1 860,2	4,3	52,2
März	666,9	2 259,0	15,3	49,8
April	1786,3	3 548,3	34,9	57,5
Insgesamt	3108,6	11 235,1	80,5	197,3

Wie aus den Tabellen ersichtlich, gestalten sich unter natürlichen Bedingungen die Konsumverhältnisse der Arten, bedingt durch die jeweiligen klimatischen Gegebenheiten, abweichend von denen der in Modellversuchen der Höhle erlangten Ergebnisse. Besonders auffallend ist dies bei *F. galba* im Jahre



1975/76, wo die langandauernden schneelosen Frosttage die Tiere am Konsum hinderten, oder im Januar 1976/77, wo die niederen Konsumwerte der Fütterungsversuche, auch im Freien niedere Werte berechnen ließen. Ein hoher Konsum konnte bei *F. galba* im Cserhát-Gebirge im Januar und Mai 1976 errechnet werden, welche mit günstigen Niederschlag-Verhältnissen korrelieren (im Januar hohe Schneedecke, im Mai reiche Niederschläge, die sich fördernd auf die Individuendichte ausübten). Die höheren Konsumwerte des Jahres 1976/77 zeigen auch bei niederen Werten der Gesamtindividuendichte höheren Streukonsum.

Tabelle 4

*Hainbuchenstreu-Konsum der untersuchten Enchytraeiden-Arten  
in den Waldbeständen des Cserhát- und Vértes-Gebirges*

Gesamte Streuproduktion	1975/76 kg/ha		1976/77 kg/ha	
Cserhát-Gebirge	1924		2727	
Vértes-Gebirge	1762		1645	
	1975/76		1976/77	
	kg/ha	% der gesamten Hainbuchen- streu	kg/ha	% der gesamten Hainbuchen- streu
Cserhát-Gebirge				
<i>F. galba</i>				
August—April	23,9	1,2	40,8	1,4
Vértes-Gebirge				
<i>F. ratzei</i>				
August—April	31,1	1,8	112,3	6,8
<i>F. galba</i>				
August—April	0,8	0,04	1,9	0,1

Abschließend wurde noch die Streumenge berechnet, die die erwähnten Arten im Jahr von der gesamten Hainbuchenstreu konsumieren. Die Angaben sind in Tab. 4 zusammengefaßt.

Wie aus der Tabelle ersichtlich, kann im Falle von *F. galba* (Bestand im Cserhát-Gebirge) unter günstigen Verhältnissen mit einer doppelten Konsummenge gerechnet werden. Von der gesamten Hainbuchenstreu beträgt diese Menge 1,2—1,4%. Bei diesen Angaben kommt der große Unterschied nicht deutlich zum Ausdruck, da im 2. Jahr die Hainbuchenstreu-Produktion bedeutend größer war.

*F. ratzeli* wies bei den Versuchen bedeutend höhere Fraßmengen auf, der berechnete Anteil von der gesamten Hainbuchenstreu im Vértes-Gebirge beträgt unter ungünstigen Verhältnissen 1,8%, kann aber bei günstigen Verhältnissen 6,8% erreichen. *F. galba* spielt hier eine untergeordnete Rolle, sie nimmt mit 0,04 und 0,1% am Konsum der gesamten Hainbuchenstreu im Jahr teil.

**Besprechung der Ergebnisse.** Die Fütterungsversuche im Laboratorium der Höhle von Aggtelek zeigen eindeutig, daß die beiden Enchytraeiden-Arten intensiv an der Zersetzung der Hainbuchenstreu beteiligt sind. Vom Rottezustand abhängig — der selbst in den gleichen Monaten verschiedener Jahre gänzlich unterschiedlich sein kann — wird die Konsumintensität der Tiere ausschlaggebend beeinflusst. Unter günstigen Verhältnissen kann eine intensive Fraßtätigkeit bereits von der Streu des Monats Februar beobachtet werden, während bei vorausgehend ungünstigen Verhältnissen dieselbe Menge erst im April erreicht werden kann.

Bei *F. galba* ergaben die Berechnungen im Hainbuchenbestand des Cserhát-Gebirges pro ha 23,9 kg (1975/76) und 40,8 kg/ha (1976/77) Hainbuchenstreu-Konsum im Jahr, im Hainbuchenbestand des Vértes-Gebirges für *F. ratzeli* 31,1 kg/ha (1975/76) und 112,3 kg/ha (1976/77) pro Jahr (unter Berücksichtigung von einer 9-monatigen Tätigkeit). Unter günstigen klimatischen Verhältnissen kann die konsumierte Streumenge auf das 2—3,6-fache ansteigen.

Wie auch aus diesen Ergebnissen eindeutig zu ersehen ist, darf die Bedeutung der Enchytraeiden bei der Zersetzung der Hainbuchenstreu nicht unterschätzt werden, insbesondere da hier nur 2 Arten von den 13 bzw. 15 Arten berücksichtigt wurden. Ich bin mir jedoch dessen bewußt, daß sich ein Teil der in den Beständen vorkommenden Arten wahrscheinlich nicht direkt an der Zersetzung der Streu beteiligt. Da aber dafür noch keine exakten Untersuchungen vorliegen, kann die Bedeutung der Enchytraeiden-Fauna an den Zersetzungsprozessen der Laubstreu nicht einheitlich beurteilt werden.

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## NEUE MELOIDEN AUS ASIEN, AFRIKA UND AUS SÜDAMERIKA (COLEOPTERA)

Von

Z. KASZAB

(Eingegangen am 8. Februar 1977)

Description of 11 new Meloid species from Asia, Africa and South America (*Epicauta* 2, *Lyttamorphia* 1, *Cylindrothorax* 5, *Meloë* 3); identification key to the species of the oriental *Epicauta* group I and to the *Cylindrothorax* group II, as well as to the *Lyttamorphia* species. New synonymy: *Cylindrothorax prasinus* KASZAB, 1953 = *Lytta spinicornis* PIC var. *caeruleonotatus* PIC, 1914 = *Cylindrothorax caeruleonotatus* PIC, 1914, **comb. et stat. n.**

Im folgenden beschreibe ich 11 neue Arten, resp. Subspezies aus den Gattungen *Epicauta*, *Lyttamorphia*, *Cylindrothorax* und *Meloë*. Bei dieser Gelegenheit revidiere ich die I. Gruppe der orientalischen Arten der Gattung *Epicauta* und die II. Gruppe der Gattung *Cylindrothorax*, weiters die Arten der Gattung *Lyttamorphia*. Eine Art der Gattung *Epicauta* bekam ich von Herrn DR. W. WITTMER (Basel), eine *Epicauta* und *Lyttamorphia* von Herrn C. A. KORYTKOWSKI (Lima), eine *Meloë* von Herrn M. SCHMID (Ottawa), eine weitere *Meloë* von Herrn J. MARTENS (Mainz), die übrigen stammen aus der Sammlung des Ungarischen Naturwissenschaftlichen Museums.

### *Epicauta wittmeri* sp. n.

sowie die Bestimmungstabelle der orientalischen Arten der Gattung *Epicauta*  
REDTENBACHER, 1845, Gruppe I.

Die neue Art gehört in die I. Gruppe der palaearktisch-orientalischen *Epicauta* (KASZAB, 1952). Die Gruppe ist vorerst durch den großen, langen oberen Enddorn der Vorderschienen gekennzeichnet. Die neue Art steht in der Nähe der Art *E. haematocephala* HAAG-RUTENBERG, 1880, von ihr aber durch wichtige Merkmale verschieden.

Um die Unterschiede besser zu kennzeichnen sowie meine alte Bestimmungstabelle mit den inzwischen beschriebenen Arten ergänzen zu können, gebe ich eine neue Tabelle der Arten der I. Gruppe und im Zusammenhang damit beschreibe ich auch die neue Art.

- 1 (2) Kopf und Halsschild rotgelb. Kopf mit auffallend großen, stark gewölbten Augen, Schläfen viel kürzer als die Breite eines Auges. Kopf grob und spärlich, erloschen



punktiert. Halsschild nur mäßig länger als breit, mit scharfer Mittellinie und groben, ungleich stehenden, ziemlich erloschenen Punkten. Fühler kurz und schlank, Basalglieder rötlich, der Spitze zu dunkler. Flügeldecken sowie die ganze Unterseite einfarbig grauweiß behaart. — Länge: 16–18 mm. Vorderindien (Umg. Bombay)

**E. divisa** (HAAG-RUTENBERG, 1880)

- 2 (1) Nur der Kopf rot, Halsschild immer schwarz. Augen kleiner und flacher, Schläfen länger.
- 3 (14) Halsschild und Flügeldecken sowie die ganze Unterseite und Beine grau behaart, höchstens die Schienen und Tarsen teilweise schwarz behaart.
- 4 (7) Die Behaarung der Mittelschienen beim ♂ innen lang abstehend.
- 5 (6) Die grauweiße Behaarung der Mittel- und besonders der Hinterschenkel und der Mittelschienen beim ♂ sehr lang abstehend. Schienenende und Tarsen dunkel. Kopf gleichmäßig, ziemlich stark und dicht punktiert, die Fühlerbeulen des Kopfes wenig gewölbt. Flügeldecken ziemlich rau skulptiert. Mittellinie des Halsschildes scharf, die Punktierung dicht, die Palpen sind rötlich. — Länge: 10–16 mm. Vorderindien (Ramandroog, Nilgiri Hills), Ceylon **E. haematocephala** (HAAG-RUTENBERG, 1880)
- 6 (5) Innenrand der Vorder- und Mittelschienen sowie das Ende der Mittelschenkel beim ♂ lang schwarz behaart; Hinterschenkel ohne lange Behaarung, einfach dicht grau behaart, Knie oben schwarz; Vorderschienen oben und innen breit grau, dann schwarz. Seitenrand grau, lang schräg nach vorn gerichtet behaart, Unterseite sehr dicht und schwarz, abstehend, Mittelschienen nur innen lang schwarz abstehend behaart. Ende der Mittel- und Hinterschienen sowie die Tarsen schwarz. Palpen schwarz, Fühler dünn und fadenförmig, das 3. Glied unten in einem schmalen Streifen bis zur Mitte grau behaart, sonst schwarz, Oberseite der zylindrischen Glieder 5–11 äußerst fein, staubartig behaart, vom 5. bis zum 8. sind sie unten anliegend rötlich behaart. Kopf groß und breit, die Augen sind auch beim ♂ verhältnismäßig klein, die Schläfen erweitert, breit abgerundet, viel breiter als an den Augen. Die Fühlerbeulen sind groß und gewölbt, dazwischen ist die Stirn vorn eingedrückt. Die Fühlerbeulen innen mit wenigen Punkten, sonst ist der Kopf grob punktiert, die Abstände zwischen den Punkten sind überall breiter als ein Punkt. Halsschild mit erloschener Mittellinie, die Oberfläche innen dichter, nach außen spärlicher punktiert. Halsschild und Flügeldecken sowie die ganze Unterseite, ausgenommen das Analsegment, grau behaart. Beim ♀ ist die Behaarung der Beine einfach, anliegend, bei den Mittelschienen einfarbig grau, bei den Vorderschienen seitlich und unten schwärzlich. — Länge: 11–15 mm. Vorderindien: Darjeeling Distr., Umg. Kalimpong, Bhakta Bahadur, 18. X. 1975, leg. DR. W. WITTMER (Holotypus ♂ und 15 Parotypen ♂, ♀; Holotypus und 10 Parotypen im Museum Basel, 5 Parotypen im Museum Budapest) **E. wittmeri** sp. n.
- 7 (4) Beine beim ♂ mit normaler, anliegender Behaarung.
- 8 (9) Kopf äußerst fein und spärlich, kaum sichtbar punktiert. Palpen schwarz. Stirn zwischen den Augen sehr breit und leicht gewölbt, Schläfen hinter den Augen lang, länger als die Breite eines Auges, Augen kleiner und weniger gewölbt. Basis der Fühler schwarz, der Schaft schwarzbraun. Hinterbrust ohne nackte Längsmittellinie. Die Knie aller Beine sowie die Tarsen, ausgenommen das Basalglied, vorwiegend schwarz. 1. Glied der Vordertarsen des ♂ oval erweitert. — Länge: 11–14 mm. Vorderindien (Madras: Ramandroog) **E. haagrutenbergi** KASZAB, 1952
- 9 (8) Kopf grob und spärlich punktiert.
- 10 (11) Fühler rotbraun, dem Ende zu braun werdend. Das 1. Glied der Vordertarsen sehr langgestreckt und schmal, auch beim ♂ kaum erweitert, mehr als anderthalbmal so lang wie das Endglied, bei den Mittel- und Hintertarsen ist das Basalglied ebenfalls sehr lang gestreckt. Augen sehr groß und hochgewölbt, die Stirn zwischen ihnen etwas eingedrückt, schmal und nur so breit wie die Oberlippe. Schläfen viel schmäler als die Augen, kurz parallel und hinten breit abgerundet, viel kürzer als ein Auge. Halsschild schmal, die Punktierung sehr dicht. Knie aller Beine und Außenrand der Mittelschienen schmal schwarz behaart, sonst grau, Hinterbrust mit schmäler, nackter Längsmittelbinde. — Länge: 14–16 mm. Vorderindien (Mysore State; Orissa) **E. cognata** (HAAG-RUTENBERG, 1880)
- 11 (10) Fühler auch an der Basis schwarz. Das 1. Glied der Vordertarsen viel kürzer, beim ♂ oval erweitert und nur wenig länger als das Klauenglied. Augen kleiner, normal, Hinterkopf länger. Stirn zwischen den Augen breit, viel breiter als die Oberlippe.
- 12 (13) Die Fühlerglieder 4–10 etwa gleichlang, am Ende einfach abgestutzt, fadenförmig. Trochanteren der Hinterbeine oben grau behaart, der Körper grauweiß behaart, Unterseite der Hinterschenkel schwarz. Kopf quadratisch, die Fühlerbeulen kaum höher, dazwischen ist die Stirn flach, die Mitte dicht eingedrückt. Die Grundfarbe der Hinter-



schiene braun bis gelbbraun, welche aber durch die dichte graue Behaarung nicht zu sehen ist. — Länge: 11,5–12 mm. China (Kwangsi), Tonkin, Laos (Vientiane)

**E. cheni** T'EN CHUAN-CHIEH, 1958

- 13 (12) Die Fühlerglieder beim ♂ vom 4. Glied an allmählich länger, die Glieder 3–6 schräg abgestutzt. Trochanteren sowie die Unter- und Innenseite schwarz, Körper, ausgenommen die Oberseite der Tarsen schwarz. Kopf nach hinten erweitert, die Fühlerbeulen sind groß und gewölbt, dazwischen ist die Stirn vorn der Clypealsutur zu leicht eingedrückt und niedergebogen. Die Grundfarbe der Hinterschienen schwarz. — Länge: 11,8–15 mm. Vorderindien (Kumaon: Dehra-Dun) **himalayica** KASZAB, 1960
- 14 (3) Die Behaarung der Oberseite nicht einfarbig grauweiß, wenigstens ein langer Streifen neben den Seiten der Flügeldecken dunkel behaart.
- 15 (16) Beine rot oder braunrot, Tarsen etwas bräunlich. Kopf ziemlich dicht und grob punktiert, hinter den Augen gleichmäßig breit halbkreisförmig abgerundet. Stirn zwischen den Augen viel breiter als die Oberlippe. Die Punktierung des Halsschildes ist ebenso grob wie die des Kopfes, aber viel dichter, Mittellinie kaum eingedrückt. Flügeldecken sehr fein skulptiert. Mittellinie des Halsschildes, Basis des Vorderrandes, die Naht der Flügeldecken, die Spitze des Seitenrandes und je ein breiter Streifen in der Mitte der Flügeldecken sowie die Unterseite grau gelb behaart (forma *typica*); oder die Flügeldeckenscheibe von der Naht und hinter der Basis bis zur Spitze grau gelb behaart, neben den Seiten bleibt aber ein sehr breiter Streifen schwarz (ab. *ladelli* ab. n.). — Länge: 8,6–11 mm. Thailand (Bangkok), Burma **rufipes** BORCHMANN, 1939
- 16 (15) Beine einfarbig schwarz.
- 17 (18) Fühler vom 3. Glied an grau behaart; das 1. Glied deutlich kürzer als das 3. Die ganze Unterseite sowie die Naht der Flügeldecken, die Seiten, außerdem je eine Längsmittelbinde der Flügeldecken grau behaart. — Länge: 9 mm. Burma (Rangoon) (= *Cantharis subvittata* FAIRMAIRE, 1896, nom. praecoccup., nec *Lytta subvittata* HAAG-RUTENBERG, 1880; *Epicauta vittulata* BORCHMANN, 1917, nom. n.: *obscuriovittata* KASZAB, 1952, lapsus) **obscuriovittata** (WELLMAN, 1910)
- 18 (17) Fühler dunkel.
- 19 (20) Halsschild vorn sehr dicht punktiert, die Punkte sind aneinanderstoßend, hinten größer und etwas spärlicher. Die ganze Unterseite mit Ausnahme der Hinterbrust, die Beine sowie die Mittellinie und die Seiten des Halsschildes, weiters die Naht und die Seiten, außerdem je eine breite Längsmittelbinde der Flügeldecken grau behaart. — Länge: 12 mm. Vorderindien (India or., ohne nähere Angabe) **griseovittata** (HAAG-RUTENBERG, 1880)
- 20 (19) Halsschild fein und ziemlich dicht, gleichmäßig punktiert, die Punktierung des Kopfes ebenfalls gleichmäßig, Stirn nicht größer und nicht dichter punktiert als der Scheitel.
- 21 (24) Der ganze Halsschild, Flügeldecken und Unterseite sowie der größte Teil der Beine einfarbig grau behaart; an den Flügeldecken zieht sich aber an den Seiten von den Schultern bis zum Ende eine breite, schwarz behaarte Längsbinde hin.
- 22 (23) Die Behaarung der Oberseite rein grau, Halsschild vorn in der Scheibe beiderseits mit schwarz behaartem Fleck. Fühler dünn, die vorletzten Glieder doppelt so lang wie breit. Die Behaarung an den Mittel- und Hinterschienen am Ende breit schwarz. Kopf ziemlich quadratisch, Schläfen hinter den Augen kaum verschmälert, fast parallel und hinten breit abgerundet, deshalb erscheint der Kopf hinten weniger lang ausgezogen. Tarsen schwarz behaart. Der Kopf ziemlich fein, gleichmäßig und dicht behaart. Halsschildpunktierung gleichmäßig und dicht. — Länge: 11–13 mm. Thailand (Korat), Laos (Vientiane) (= *nudovittata* BORCHMANN, 1942, error) **nudomarginata** BORCHMANN, 1939
- 23 (22) Die Behaarung der Oberseite gelbgrau. Halsschild ohne schwarz behaarten Fleck, Fühler des ♂ dicker, nur das Endglied etwa doppelt so lang wie breit, zu den Basalgliedern sind sie allmählich kürzer, die vorletzten Glieder sind höchstens anderthalbmal so lang wie breit. Schienen bis zur Spitze gleichförmig gelbgrau behaart, die Tarsen oben schwarz, nur die Basis des 1. Gliedes der Mitteltarsen gemischt behaart. Kopf rundlich, Augen groß, die Schläfen gleich hinter den Augen stark verengt und mit dem Hinterkopf einen breiten Bogen bildet, deshalb erscheint der Hinterkopf länger ausgezogen. Die Punktierung des Kopfes grob und spärlich, die des Halsschildes ebenfalls grob und spärlich, besonders in den Scheibenbuckeln hinter der Mitte. — Länge: 11,5–12 mm. Vorderindien (Tharrawaddy) **indica** KASZAB, 1960
- 24 (21) Die ganze Ober- und Unterseite dunkel behaart, nur die Seiten des Halsschildes, die Naht der Flügeldecken, weiters die Seiten und das Ende derselben sowie die Vordersehenkeloberseite und die Abdominalsegmente an den Seiten grauweiß behaart (forma *typica*); manchmal sind die Flügeldecken mit je einer grau behaarten Längsmittel-



binde versehen (ab. *siamica* KASZAB, 1952). Der Kopf ist ziemlich stark und spärlich punktiert, Schläfen kurz, parallel. Halsschild sehr dicht punktiert, die Mittellinie ziemlich stark eingedrückt, der Eindruck vor der Basis in der Mitte schmal. — Länge: 10–14 mm. Thailand (Chiungmai), Burma (Teinzo, Upper Chindwin, Mohnyin R.: Katha), Annam (B'sré: 80 km NNW von Djiring) **fortespinosa** BORCHMANN, 1939

### *Epicauta korytkowskii* sp. n.

Unter den Arten der Gattung *Epicauta* aus Peru gibt es eine hochinteressante Art, namentlich *E. weyrauchi* KASZAB, 1960, welche durch die auffallende Fühlerform und Behaarung charakteristisch ist. Hier kam eine neue Art zum Vorschein, welche in die Nähe von *weyrauchi* gestellt werden muß. Weil die Unterschiede gegenüber den anderen Arten minimal sind, gebe ich hier nur die Unterschiede zwischen beiden Arten an.

#### *E. weyrauchi* KASZAB, 1960

1. Fühler des ♂ etwas abgeflacht, das 3. Glied dreieckig, vom 4. Glied an schmaler und dünn, das 4. Glied selbst bedeutend länger als breit, bis zum 9. allmählich schmaler und etwa gleichlang, das 10. kleiner als das 9. und das Endglied fast doppelt so lang wie das 10., scharf zugespitzt und schmal.
2. Unterseite der Glieder vom Ende des 3. Gliedes bis zum 10. in der Mittellinie mit Haarpinsel, d. h. am Ende des 3. Gliedes findet man 2 Pinsel, die übrigen mit je 4 Pinseln, ausgenommen die zwei vorletzten Glieder, welche je mit drei Pinsel versehen sind. Die Pinsel bestehen aus sehr langen, abstehenden, etwas gekrümmten Haaren.
3. Stirn ein wenig gewölbt, Schläfen hinter den Augen gerade, leicht erweitert, Scheitel in der Mitte nicht eingedrückt.
4. Länge: 11–13 mm (mit vorgestrecktem Kopf).

#### *E. korytkowskii* sp. n.

1. Fühler des ♂ stark abgeflacht und breit, das 3. Glied breit dreieckig, das 4. genauso breit wie das Ende des 3. und breiter als lang, das 5. fast ebenso breit, nur merklich länger, vom 5. an allmählich verjüngt, die Länge der Glieder aber vom 4. bis zum 10. etwa gleichlang; das drittletzte Glied etwa so lang wie breit, das zweitletzte etwas schmaler als lang, das vorletzte um etwa ein Viertel länger als breit und das Endglied etwa um ein Drittel länger als das 10., schmal parallel und zugespitzt.
2. Unterseite der Glieder vom Ende des 3. Gliedes bis zum 10. in der Mittellinie mit einer Reihe von Haarpinseln; das 3. Glied mit einem, die übrigen mit je zwei Haarpinseln, welche aus sehr langen, steif abstehenden, pinselartigen Haaren bestehen.
3. Stirn flach, Schläfen hinter den Augen etwas quer eingedrückt, deshalb sind die Augen stärker aufgewölbt, Scheitel in der Mitte ebenfalls leicht eingedrückt.
4. Länge: 10,5–12 mm (mit geneigtem Kopf).

Holotypus ♂: Peru, Sta Cruz, 9. VI. 1963 (Papa), leg. C. A. KORYTKOWSKI; Paratypus ♂ aus demselben Fundort (beide im Ungarischen Naturwissenschaftlichen Museum in Budapest).

### *Lyttamorpha peruana* sp. n.

Der Gattung *Lyttamorpha* KASZAB, 1959 gehören bis jetzt folgende Arten an: *reichenbachii* (KIRSCH, 1866), *brunneoreducta* (PIC, 1916) und *luteocinctipennis* KASZAB, 1959. Alle Arten dieser Gruppe kommen in Mittel- und Südamerika vor. Von Herrn A. C. KORYTKOWSKI bekam ich eine Art aus Peru, welche sich

als neu erwiesen hat. Die Unterschiede fasse ich in einer kurzen Bestimmungstabelle zusammen.

- 1 (2) Halsschild einfarbig rot. Stirn mit rotem Stirnfleck, ausgenommen die Basis mit je einem schmalen, gelben Saum an der Spitze, in der Naht und am Ende. Sonst ist der Körper vollkommen schwarz. Stirn hinten in der Mitte sowie beiderseits vor den Augen eingedrückt, die Punktierung äußerst spärlich und grob. Halsschild in der vorderen Hälfte quer eingedrückt, außerdem die Mitte von der Basis an breit verflacht und eingedrückt, deshalb ist der hintere Teil des Halsschildes vollkommen geteilt und buckelig gewölbt, sehr spärlich punktiert, die eingedrückten Teile dagegen glatt. Flügeldecken sehr grob isodiametrisch genetzt und matt, außerdem fein und spärlich punktiert. — Länge: 17 mm. Südbrasilien (Sao Paolo)

**luteocinctipennis** KASZAB, 1959

- 2 (1) Halsschild und Flügeldecken schwarz, Kopf ohne roten Stirnmakel.  
3 (6) Die Naht von der Basis bis zur Spitze, außerdem das Ende und der Seitenrand der Flügeldecken rotgelb oder die Flügeldecken rotgelb, nur je ein erloschener braunschwarzer Makel vor der Spitze und ein erloschener Fleck hinter den Schultern dunkel. 1. Glied der Mittel- und Hintertarsen des ♂ lang dreieckig mit geraden Seiten, weniger stark erweitert und bedeutend länger als das 2., noch breitere Glied.  
4 (5) Flügeldecken schwarz, ringsum breit gelbrot, der gelbe Saum an der Basis und am Ende breit. Schienen etwas dünner, abgeflacht. — Länge: 20–27 mm. Peru (Chasamajo; Marcapata); Argentinien (Tucuman); Columbia (Bogota)

**reichenbachi** (KIRSCH, 1866)

- 5 (4) Flügeldecken gelbrot; ein erloschener Makel hinter den Schultern und weit vor der Spitze braun. Der Grund gerunzelt und matt. Schienen breiter, seitlich mehr abgeflacht. — Länge: 20 mm. Ekuador (Catamayo)

**brunneoreducta** (PIC, 1916)

- 6 (3) Körper schwarz; Seitenrand der Flügeldecken, die Basis sowie ein gemeinsamer dreieckiger Fleck in der Naht, welche bis zur Mitte reicht, gelbrot, sonst sind die Flügeldecken (auch am Ende und im hinteren Teil der Naht) schwarz; der Grund fein chagtriiert und matt, außerdem fein und spärlich punktiert. Vorder- und Mitteltarsen des ♂ sehr stark erweitert und flach, das 1. Glied breit und flach, Seiten gebogen, nicht gerade, Hintertarsen dünn. Kopf mit großen, aus der Wölbung des Kopfes hoch aufgewölbten Augen, Stirn und Scheitel sowie Halsschild glatt, nur mit einzelnen, ungleich stehenden, kaum erkennbaren Punkten. Kopf und Halsschild beim ♀ dichter und gleichmäßiger punktiert. — Länge: 16–20 mm (mit geneigtem Kopf). Holotypus ♂: Peru, Pucara, 24. III. 1967 (Nycandra), coll. S. Paz; Paratypus 1 ♀ aus demselben Fundort (Museum Budapest)

**peruana** sp. n.

## Fünf neue Arten der Gattung *Cylindrothorax* Escherich, 1896

### sowie die Bestimmungstabelle der Arten der Gruppe II

Nach meiner Revision (KASZAB, 1955) ist die Gruppe II die artenreichste in der Gattung. Alle Arten sind durch die Fühlerform des ♂ sehr charakteristisch. Sie haben ein langes 1. Glied, welches gebogen ist, ein 2. kurzes Glied, ein großes dick ovales, unten ausgehöhltes 3. Glied, welches am Ende innen meist zugespitzt ist und fadenförmige Glieder 4–11. Das 3. Glied manchmal einfacher, dreieckig, unten flach, oben seitlich innen der Länge nach eingedrückt, und das Ende besitzt innen eine mehr oder weniger scharfe Ecke. Letztes Analsegment des ♂ vollkommen geteilt und lang, schmal ausgezogen, dünn hautartig.

Die Verbreitung der Gruppe ist sehr beschränkt. Die Mehrzahl der Arten kommt in Somaliland vor, einige Arten in der unmittelbaren Nähe von Abessi-



nien und Kenya, ganz wenige sind ausschließlich in Kenya-Tanganyika, südlich bis Südrhodesien und Zaire (Katanga) heimisch. Mit den hier in der Bestimmungstabelle beschriebenen 5 Arten erhöht sich die Zahl der bisher in diese Gruppe gehörenden Arten, resp. Unterarten auf 20.

Eine Art aus Somaliland, welche ich unter dem Namen *C. prasina* KASZAB, 1953 beschrieb, muß ich in Synonym stellen. Es stellte sich heraus, daß diese mit der von PIC als Form der *C. spissicornis* (PIC, 1911) beschriebenen *C. caeruleonotatus* (PIC, 1914) identisch ist, welche ich als eigene Art betrachte.

- 1 (20) Kopf, Halsschild und Flügeldecken einfarbig erzgrün oder erzblau. Brust und Abdomen metallisch.
- 2 (3) Beine einfarbig dunkelbraun, Ober- und Unterseite blau, Fühler und die Mundteile braunschwarz. Stirn beim ♂ vorn in der Länge und beiderseits eingedrückt, seitlich sind die Eindrücke scharf gerandet, die mittlere Längsschwiele leicht gewölbt. Kopf und Halsschild sehr grob punktiert, Flügeldecken grob gerunzelt, spärlich, schräg abstehend gelbgrau behaart. Fühler beim ♂ vom 4. Glied an fadenförmig, das 3. beim ♂ oval, am Ende mit abgerundetem Anhängsel, nicht zugespitzt. Basalglied ebenso lang wie das 3., gegen die Basis stark verengt, sonst parallel. Halsschild vorn mit starkem Quereindruck. — Länge: 6–9 mm. Ostafrika (Bardouan)
- diaphorocerosomorphus** (PIC, 1914)
- 3 (2) Beine größtenteils oder vollkommen gelb, meist auch die Trochanteren und Coxen gelb.
- 4 (5) Der ganze Körper ist amethystblau. Kopf und Halsschild spärlich und fein punktiert, Flügeldecken sehr dicht und ziemlich fein, stellenweise gerunzelt. Das ganze Vorderbein mit den Hüften gelb, Mittel- und Hinterbein gelb, die Hüften dunkel. Beim ♂ ist der Fühler vom 4. Glied an fadenförmig, schwarz, das Ende des 1. Gliedes sowie der größte Teil des 3. dunkel, alle Tarsen sind dunkel. Stirn beim ♂ breit, breiter als die Basis der Mandibeln, einfach leicht gewölbt. — Länge: 7–10 mm. Somaliland (Bohotle: Eil)
- amethystinus** KASZAB, 1953
- 5 (4) Ober- und Unterseite glänzend grün oder blaugrün purpurfarbig.
- 6 (11) Beine mit dunklen Knien. Meist auch die Tarsen, selten auch die Schienenenden dunkel.
- 7 (10) Das 3. Fühlerglied beim ♂ groß, oval erweitert, unten ausgehöhlt, das Ende spitzwinklig ausgezogen. Stirn breiter als die Basis der Mandibeln. Kopf und Halsschild sehr grob punktiert, der Grund zwischen den groben Punkten fein punktiert. Die Hüften der Beine gelb, bei den Hinterhüften ist nur die Basis gelb.
- 8 (9) Der Kopf ist beim ♂ hinten in einem einfachen Bogen breit abgerundet, deshalb erscheint der Hinterkopf länger ausgezogen. 1.–3. Fühlerglieder beim ♂ an der Basis breit gelbrot, die Schienen sind hell bräunlich, Hinterschienen gelb, Tarsen gegen das Ende dunkler. Die Querrfurche zwischen Stirn und Clypeus scharf und tief. Stirn abgeflacht. — Länge: 9 mm. Zwischen Somaliland und Rudolph-See, Kenya (Turkana Prov.)
- telekyi** (FAIRMAIRE, 1891)
- 9 (8) Der Kopf ist beim ♂ hinten beiderseits breit gebogen, die Mitte aber etwas abgestutzt, deshalb erscheint der Hinterkopf weniger stark ausgezogen. Fühlerbasis schwarz, das 3. Glied beim ♂ stark oval erweitert, unten ausgehöhlt und das Ende mit scharfer Spitze ausgezogen. Schienen, auch die hinteren sind außen, resp. an der Oberseite etwas bräunlich bis braun, die Tarsen sind dunkler. Die Querrfurche zwischen Stirn und Clypeus nicht tief und nicht scharf. Stirn breit, vollkommen abgeflacht, die Grundskulptur zwischen den groben Punkten runzelig. — Länge: 9–10 mm. Brit. Somaliland (Dudar), Kenya (Rudolph-See: Sagan Omo)
- zavattarii** KASZAB, 1953
- 10 (7) Das 3. Glied beim ♂ schmal, das Ende gedreht und mit einer Ecke versehen, d. h. in eine Ecke erweitert, nicht oval und unten nicht ausgehöhlt. Stirn beim ♂ schmäler als die Basis der Mandibeln, die Augen sind sehr groß, Hinterkopf schmal und kurz, in einen Bogen abgerundet. Schienen und Tarsen meist dunkel, Hüften gelb, beim Hinterbein nur die Basis der Hüften gelb. Oberseite purpurfarbig (forma *typica*) oder glänzend grün (ab. *bayeri* PIC, 1914) oder blaugrün (ab. *paolii* PIC, 1927). — Länge: 8–11 mm. Forma *typica*: Kenya (Zuwani); ab. *bayeri* (PIC, 1914): Kenya (Tsavo River; Mackinnon Road), Somaliland (Dodo; V. Duca Abruzzi); ab. *paolii* (PIC, 1927): Somaliland (V. Duca Abruzzi), Tanganyika (Ikutka; Manyara-See; Kwakiyembe)
- purpureicolor** (PIC, 1914)



- 11 (6) Beine einfarbig gelb, die Knie sind nicht verdunkelt.
- 12 (15) Fühler des ♂ ziemlich einfach, das 2. Glied groß, parallel, gebogen, das 3. Glied dreieckig, unten flach, seitlich innen am Ende mit einer Ecke. Kopf mit sehr großen Augen. Fühler vom 4. Glied an gelb. Beine mit den Hüften gelb. Körper erzgrün.
- 13 (14) Größer. Das 3. Fühlerglied des ♂ dem Ende zu stärker erweitert, innen am Ende mit abgerundeter Ecke. Fühler sehr schlank, das Endglied um ein Drittel länger als das 10. Stirn schmal, nicht breiter als die Oberlippe. Augen sehr groß, Hinterkopf schmal und kurz, vollkommen abgerundet. Die Punktierung des Kopfes und Halsschildes sehr grob, aber nicht gerunzelt. — Länge: 11 mm. Somaliland
- grossepunctatus** KASZAB, 1955
- 14 (13) Kleiner. Das 3. Fühlerglied des ♂ dem Ende zu wenig erweitert, innen am Ende mit schwach abgesonderter Ecke. Fühler schlank, das Endglied aber kaum merklich länger als das 10. Augen groß, Hinterkopf stärker entwickelt, abgerundet. Halsschild sehr gestreckt, mit scharfer Längsmittellinie, in der Scheibe und vorn quer eingedrückt. Stirn vorn in der Mitte mit einem schwachen Kiel und hinten mit einer kurzen Längsfurche. Die Punktierung des Vorderkörpers grob und spärlich, ungleich. Flügeldecken dicht punktiert-gerunzelt, matt, graugelb behaart. Beine mit den Hüften gelb, Hinter-tarsen etwas dunkel. — Länge: 7 mm. Holotypus ♂: Somaliland, North. Region, bet. Gardo & Gerove, X. 1959, leg. C. HEMMING; Paratypus ♀: 12 km N of Hargeisa, IX. 1959, leg. C. KOCH, beide sind im Ungarischen Naturwissenschaftlichen Museum aufbewahrt
- kochi** sp. n.
- 15 (12) Fühler des ♂ besitzt langes 1. Glied, welches ziemlich parallel ist, außerdem das 3. Glied sehr groß, oval, unten ausgehöhlt, und das Ende mehr oder weniger zugespitzt oder abgerundet vorgezogen. Kopf mit sehr großen oder mit normal großen Augen; in dem letzten Fall ist der Hinterkopf länger und weniger gerundet. Auch die Stirn breiter als die Basis der Mandibeln.
- 16 (19) Stirn beim ♂ einfach flach, ohne zwei Längseindrücke. Vordertarsen des ♂ einfach, das 1. Glied bei Seitenansicht parallel, nur an der Basis verjüngt.
- 17 (18) Stirn breiter als die Basis der Mandibeln, flach, Augen normal, seitenstehend, erreichen unten nur die Basis der Maxillen. Das 1. Fühlerglied beim ♂ gelbbrot, gebogen und zur Spitze breiter, das 3. Glied schwarz, sehr dick oval, unten tief ausgehöhlt und innen am Ende hornartig ausgezogen. Die Glieder 4—11 gelbrot, ziemlich kurz, das 4. und 5. dreieckig, die übrigen fast parallel. Stirn vorn quergewölbt und viel höher als der Clypeus, welcher ebenfalls so grün ist wie der Kopf, Oberlippe hellbraun, die Maxillarpalpen gelbrot. Oberseite des Kopfes grob und spärlich punktiert, der Grund punktiert, fein gerunzelt. Schläfen nach hinten verjüngt und gut ausgebildet. Halsschild schmaler als der Kopf, bis über die Mitte parallel, vorn quer eingedrückt, die Mitte in Längsrichtung leicht eingedrückt. — Länge: 7—11 mm. Holotypus ♂: Yemen, Wadi Zabid, 1970, leg. SZALAY—MARZSO; Paratypen: 2 ♂ 1 ♀ aus demselben Fundort wie Holotypus; 10 ♀ aus Sokna, Tihama, 200 m. 20. VIII. 1965, leg. G. SCORTECCI, alle im Museum Budapest; aus dem letzten Fundort befindet sich eine große Serie, alles ♀, im Museum Mailand
- szalaymarzsoi** sp. n.
- 18 (17) Stirn ist schmaler als die Basis der Mandibeln. Augen sehr groß, unten weit über den Niveau der Maxillenausrandung eingeeengt, der Raum zwischen den beiden Augen unten schmaler als die Unterlippe. Hinterkopf kurz, breit abgebogen. Halsschild schmal, bis zur Mitte parallel, vorn quer eingedrückt. Die Punktierung des Vorderkörpers grob und ungleich. Beine mit den Hüften und Tarsen gelb, Hinterhüften nur ganz außen an der Seite metallisch, sonst gelb. — Länge: 10 mm. Somaliland
- cerocomoides** KASZAB, 1955
- 19 (16) Stirn des ♂ beiderseits in Längsrichtung eingedrückt, die Mitte vorn schwach gekielt. Beim ♂ ist das 1. Glied lang, gebogen, das 3. Glied oval, dick, innen an der Außenseite spitzwinklig ausgezogen; die Glieder 4—11 sehr dünn, auch das 4. und 5. Glied parallel, bis zum vorletzten sind die Glieder gleichlang. Augen groß und gewölbt, der Raum zwischen ihnen unten schmaler als die Stirn. Schläfen etwas parallel, dann ist der Hinterkopf breit abgerundet. Halsschild bis weit über die Mitte parallel, dann in einem Bogen verengt, vorn leicht eingedrückt, die Mitte an der Basis eingedrückt. Die Punktierung des Vorderkörpers spärlich und ungleich, der Grund an der Stirn glänzend, am Hinterkopf fein punktiert, am Halsschild grob chagriniert. 1. Glied der Vordertarsen des ♂ bei seitlicher Ansicht unten gebogen, nicht parallel. — Länge: 7—9 mm. Somaliland (Gairedarre)
- testacipes** (FAIRMAIRE, 1882)
- 20 (1) Kopf, Halsschild und Flügeldecken nicht einfarbig metallisch, meist ist der Halsschild rotgelb (oft mit zwei schwarzen Flecken) oder der Kopf ist nicht einfarbig schwarz oder metallisch; manchmal der Halsschild mit größeren metallischen Flecken, selten



- erscheint er fast vollkommen einfarbig dunkel, nur die Seitenränder in verschiedener Ausdehnung rötlich. Unterseite metallisch oder in seltenen Fällen gelbbrot, nur die Ränder der Segmente dunkel. Selten ist die Schenkelbasis gelbbrot. Das 3. Glied der Fühler des ♂ immer groß, oval, unten ausgehöhlt und am Ende innen spitzig.
- 21 (35) Kopf und Flügeldecken sowie die Unterseite und Beine, weiters die Fühler einfarbig dunkel oder die Fühler gegen das Ende rotbraun. Schildchen dunkel.
- 22 (23) Nur die Ränder des Halsschildes, vor allem vorn in der Mitte, beiderseits vor der Basis seitlich und die Basis in der Mitte hellbraun, sonst dunkelblauschwarz wie der Kopf. Flügeldecken grünlichblau, Unterseite mehr grün, Fühler und Beine schwarz. Stirn des ♂ breit hufeisenförmig eingedrückt, vorn in der Mitte mit einer länglichen Beule. Das 3. Fühlerglied beim ♂ sehr dick, oval, unten ausgehöhlt, am Ende innen mit einem hornartigen scharfen Gebilde. Das 4. Glied kurz, zur Basis sehr stark verengt, kürzer als das 5. Glied, jedes der übrigen Glieder ist ein wenig länger und dünner, das Endglied das längste. Kopf und Halsschild sehr spärlich, Flügeldecken dicht anliegend grau behaart, der eingedrückte Teil des Kopfes nackt und glänzend, Schläfen und Hinterkopf in einen breiten Bogen abgerundet. Halsschild langoval, vorn quer eingedrückt, die Mitte mit Längseindruck, die Punktierung fein und ungleich, der Grund chagriniert, deshalb fettglänzend. Flügeldecken dicht punktiert-gerunzelt. Beine schwarz, 1. Glied der Vordertarsen bei seitlicher Ansicht unten gebogen. — Länge: 8 mm. Holotypus ♂: Somaliland, Djibuti (in der Sammlung des Ungarischen Naturwissenschaftlichen Museums) **djibutii** sp. n.
- 23 (22) Halsschild mit zwei großen, langen, die Scheibe durchziehende metallische Flecken, welche die Mittellinie und die Ränder frei lassen.
- 24 (25) Beine sowie die ganze Unterseite etwas kupferig grün, metallisch, was aber durch die graue, dichte Behaarung nicht zu sehen ist. Stirn des ♂ beiderseits eingedrückt, die Mitte mit schwachem Längskiel. Vorn ist die Punktierung sehr spärlich, hinten dichter, Halsschild spärlich und ungleich punktiert, vorn quer stark eingedrückt. Kopf und Halsschildflecke etwas messingfarbig. Flügeldecken erzgrün. — Länge: 7–10 mm. Somaliland (Belet-Uen), Abessinien (S. Galla) **spiniornis spiniornis** (PIC, 1911)
- 25 (24) Beine gelbbraun, die Knie und das Ende der Tarsen aber dunkelbraun bis schwarz oder die Schienen und Tarsen schwarz, die Schenkel aber gelbbraun. Fühler vom 4. Glied an braun oder wenigstens am Ende braun. Kopf des ♂ zwischen den Augen tiefer eingedrückt und glatt, unpunktiert. Hinterkopf mit den Schläfen in einem gemeinsamen Bogen abgerundet, vom Scheitel bis zum Hinterrand der Augen kürzer als die Länge eines Auges. Das 3. Fühlerglied des ♂ dicker und mehr gerundet, der fingerartige Zahn am Ende innen breiter, kürzer, spitzig. Kopf blaugrün bis schwarzblau, Halsschildflecken grünlich, Flügeldecken düster grün. Brust und Abdomen kupferrot. — Länge: 7–10 mm. Somaliland (Rabade: Eil) **spiniornis scorteccei** KASZAB, 1959
- 26 (21) Halsschild einfarbig rotgelb oder höchstens mit zwei kleinen, erloschenen braunen Flecken in der Scheibe.
- 27 (34) Halsschild in der Scheibe mit zwei kleinen, bräunlichen, rundlichen Flecken, der Grund fast glatt, selten matt.
- 28 (33) Kopf schwarz.
- 29 (30) Kopf und Halsschild chagriniert und matt. Beim ♀ ist die Stirn beiderseits eingedrückt. Schläfen und Scheitel ungleich punktiert, die Stirn dagegen nur an dem Augenhinterrand punktiert, sonst fein gerunzelt. Halsschild mehr als anderthalbmal so lang wie breit, langoval, vorn in der Quere eingedrückt, Oberseite nur mit ganz spärlich gestellten, ungleichen Punkten besetzt. Kopf mit den Fühlern und Mundteile schwarz, Flügeldecken kupferrot, an den Schultern mit goldenem, erloschenem Anflug, Unterseite und Schenkel blau, Schienen und Tarsen schwarz. — Länge: 11 mm. Tanganyika (Masai Distr.: Longido) **masaiicus** KASZAB, 1960
- 30 (29) Kopf und Halsschild am Grund glatt.
- 31 (32) Kopf beim ♂ und ♀ auch hinten äußerst fein, ungleich und sehr spärlich punktiert; Halsschild fast ganz glatt, kaum erkennbar punktiert. Stirn mit zwei sehr tiefen und langen Furchen, dazwischen nach der Mitte mit einer hoch erhabenen Längskante. Beim ♀ ist die Stirn beiderseits leicht eingedrückt. Der Kopf länglich oval. Flügeldecken und Unterseite blau, Schenkel schwarzblau, Schienen und Tarsen schwarz (forma typica), oder Flügeldecken und Unterseite erzgrün, Beine blau, Schienen und Tarsen schwarz (ab. *semiviridis* PIC, 1947) oder schließlich die Flügeldecken kupferrot, Brust und Abdomen blau, Schenkel dunkelblau, Schienen und Tarsen schwarz (ab. *purpureipennis* KASZAB, 1955). — Länge: 10–13 mm. Kenya (Watita Hill), Tanganyika (Bihawana: Ngerengere; Tununguo: Ndala), Südrhodesien (Salisbury; Matetsi) (= *babaulti* PIC, 1917) **bifoveiceps bifoveiceps** (FAIRMAIRE, 1897)



- 32 (31) Kopf und Halsschild beim ♂ und ♀ grob und ungleich punktiert, Kopf breiter, beim ♂ die Stirn weniger tief eingedrückt und die dazwischen liegende Kante weniger hoch. Die grobe Punktierung des Hinterkopfes reicht auch bis auf die Stirn. Stirn beim ♀ ziemlich flach, nur Spuren von zwei Eindrücken. Flügeldecken und Brust sowie Abdomen, weiters Schenkel metallisch grün, Schienen und Tarsen schwarz. — Länge: 11–13 mm. Zaire (Katanga, Elisabethville) **bifoveiceps basilewskyi** KASZAB, 1955
- 33 (28) Kopf amethystblau, Flügeldecken und Unterseite blau, Schenkel mit bläulichem Schimmer, Schienen und Tarsen schwarz. Fühler und Mundteile bräunlich. Kopf breit quadratisch, Stirn mit einem V-förmigen Eindruck, der Teil am Clypeusrand breit dreieckig, gewölbt. Schläfen parallel, Hinterkopf abgestutzt, die Punktierung sehr fein und spärlich. Halsschild oval, länger als breit, vorn der Quere nach eingedrückt, die Mittellinie scharf eingeschnitten. Flügeldecken sehr dicht und fein, runzelig punktiert und matt. — Länge: 8 mm. Holotypus ♀: Abessinien, Tana-See (in der Sammlung des Ungarischen Naturwissenschaftlichen Museums) **tanaensis** sp. n.
- 34 (27) Halsschild einfarbig rotgelb, ohne schwarzen Makel in der Scheibe. Kopf mit bläulichem Schimmer, Flügeldecken azurblau, Brust und Abdomen blau, Beine schwarz, Fühler schwarz, die Glieder 4–11 bräunlich. Stirn beiderseits von vorn an bis zum Hinterrand der Augen breit eingedrückt, dazwischen ist die Mitte nach vorn allmählich stärker aufgewölbt und dreieckig. Die Punktierung, auch am Hinterkopf sehr fein und spärlich. Halsschild langoval, vorn quer eingedrückt, die Mitte tief gefurcht, sehr spärlich, ungleich und fein punktiert, der Grund glänzend. Flügeldecken sehr dicht und runzelig punktiert, matt, anliegend dicht grau behaart. Das 3. Fühlerglied des ♂ groß, unregelmäßig oval, oben gewölbt, unten tief ausgehöhlt, das Ende innen hornartig ausgebildet. Die Glieder 4–11 sehr dünn, fadenförmig. — Länge: 11,8 mm. Tanga-nyika (Ikutha) **ikuthanus** KASZAB, 1955
- 35 (21) Kopf und Halsschild sowie das Schildchen entweder einfarbig gelbrot oder der Kopf wenigstens hinter den Augen gelbrot. Der Halsschild hat verschiedenartige dunkle Flecke. Unterseite und Beine ebenfalls entweder vollkommen gelbrot oder beide verschiedenartig dunkel, überwiegend aber hell.
- 36 (37) Kopf nur teilweise gelbrot, Halsschild mit metallisch gefärbtem Fleck. Unterseite größtenteils rotgelb, nur die Ränder der Abdominalsegmente dunkel, Beine teils oder ganz dunkel. Flügeldecken erzgrün. Kopf und Halsschild schmal, Augen groß, Stirn beim ♂ beiderseits leicht eingedrückt und behaart, die Längsmittelbeule dazwischen flach. Beim ♂ ist die Stirn schmäler als die Basis der Mandibeln und der ganze Vorderkopf metallisch, beim ♀ nur ein Fleck an der Stirn dunkel. Halsschild an den Vorderhüften sowie je ein sich nach hinten ziehender Ast in der Scheibe metallisch grün, sonst rötlich; sehr grob und dicht, ungleich punktiert. Schenkel schwarz mit blauem Schimmer (♂) oder die Schenkel in verschiedener Ausdehnung, ausgenommen die Knie, hell (♀), Schienen und Tarsen dunkel. Mitte der Vorder- und Mittelbrust blau (♂) oder gelb (♀). — Länge: 11,5–13,5 mm. Somaliland (Gallaciao, Bohotle), Abessinien (Mustahil) (= *prasinus* KASZAB, 1953) **caeruleonotatus** (PIC, 1914)
- 37 (36) Kopf und Halsschild sowie das Schildchen, weiters die ganze Unterseite und Beine gelbrot. Nur die Ränder der Abdominalsegmente grünlich, außerdem die Knie und Vorderschienen sowie die Tarsen leicht bräunlich. Flügeldecken erzgrün. Kopf erloschen und spärlich punktiert, Schläfen hinter dem Hinterrand der Augen etwas erweitert und der Hinterkopf breit abgerundet. Halsschild stärker und ungleich punktiert, vorn quer eingedrückt. Flügeldecken grob gerunzelt und matt. — Länge: 11,5–12,5 mm. Holotypus ♀: Somaliland, Balleh, Solchugto, Horafadi rd., North Territory, leg. C. F. HEMMING; Paratypus ♀: Somali, Paulitschke (in der Sammlung des Ungarischen Naturwissenschaftlichen Museums) **prasinoides** sp. n.

**Meloë (Meloëgonius) coriarius himalayicus ssp. n.**

*M. coriarius* BRANDT & ERICHSON, 1832, besitzt sehr charakteristische Skulptur der Flügeldecken, und zwar große, gewölbte, rundliche, glänzende Erhabenheiten und radial gerunzelten Rändern. Außerdem der Halsschild parallel und die Oberfläche abgeflacht, die Basis mit einer Mittelfurche.



Die neue Unterart ist von der Stammform in folgenden Merkmalen verschieden.

**M. c. coriarius** BRANDT & ERICHSON, 1832

1. Fühler mit amethystblauer Behaarung, die ganz anliegende, staubartige Behaarung der 4 Endglieder ist auch metallisch.
2. Die Längsmittelfurche des Halsschildes reicht weit über die Mitte, nicht grubenförmig.
3. Die Scheibe des Halsschildes zwischen Seitenrand und Mitte längs eingedrückt.
4. Nur die Hinterecken des Halsschildes abgerundet, die Abrundung scharf und kurz.
5. Kopf hinten am Scheitel bei seitlicher Ansicht schwach gebogen, und der Querbogen ist auch ziemlich flach.
6. Länge (bis zum Flügeldeckenende): 12—19 mm.

**M. c. himalayicus** ssp. n.

1. Die abstehende Behaarung der Fühlerglieder 1—6 blau, die staubartige Behaarung der 4 Endglieder nicht metallisch, grauschwarz.
2. Die Längsmittelfurche des Halsschildes reicht bis zur Mitte, vor der Basis kurz grubenförmig.
3. Die Scheibe des Halsschildes einfach flach, der Länge nach nicht eingedrückt.
4. Die Hinterecken des Halsschildes breit abgerundet, der Bogen der Abrundung schräg breit abgestutzt.
5. Kopf hinten am Scheitel bei seitlicher Ansicht breit gebogen, und der Querbogen ist auch hoch.
6. Länge: 14—19 mm.

Holotypus ♂: Indien, Kaschmir, Srinagar, 1700 m, leg. LEPACH (im Museum Budapest); 1 ♂ Paratypus: Indien, Kaschmir, Pahalgam, Himalaya-Hauptkette, 2400 m, 14.—20. V. 1976, leg. MARTENS & SCHAWALLER (im Museum Frankfurt/M.).

**Meloë (Micromeloë) terentjevi** sp. n.

Vollkommen schwarz, Vorderkörper matt, Flügeldecken fettglänzend, die Unterseite und Beine glänzend. Die Behaarung der Kopfunterseite, Kopfhinterrand, Halsschildmitte und Hinterrand sowie kleine Flecke in den Flügeldecken sowie neben den Spiegelflecken der Abdominaltergite gelb. Beine und Unterseite braun bis schwarz behaart. K o p f breit dreieckig, flach, breit, die Stirn ein wenig tiefer, die Mitte breit isodiametrisch chagriniert und vollkommen matt, dazwischen kaum erkennbar punktiert, die Punktierung beiderseits neben dem Clypeus und Augen größer. Schläfen hinter den Augen gerade erweitert, lang, die Schläfenbeule breit abgerundet, der Scheitel in der Mitte ausgerandet, Hinterkopf mit einem schmalen Streifen von gelben Haaren. F ü h l e r einfach, vom 3. Glied an gleich dick, die Glieder 4—10 länger als breit, anliegend schwarz behaart, das Endglied lang, zugespitzt. Unterkopf flach, dicht gelb behaart. H a l s s c h i l d verkehrt trapezförmig, an den stumpfwinkligen Vorderecken am breitesten, nachher etwas ausgeschnitten verengt und im hinteren Viertel abgerundet. Die Basis breit ausgerandet und gelb behaart, die Mitte und die Scheibe beiderseits vorn eingedrückt, in dem Eindruck der Mitte äußerst dicht, gerunzelt fein punktiert und gelb behaart, sonst ist die Punktierung spärlich, seitlich gröber, der Grund chagriniert und matt. F l ü g e l d e c k e n mit stumpfem Humeralkiel und innen an der Basis bis weit über die Mitte leicht eingedrückt, ungleich gerunzelt, etwa von der Mitte

an bis zur Spitze in den tieferen Eindrücken mit gelben Haarflecken in einer Linie. U n t e r s e i t e des Abdomens sehr grob gerunzelt und glänzend, die Tergite mit je einem Y-förmigen gelben, schmalen Haarfleck, ausgenommen das letzte Tergit, welches nicht verastet ist. B e i n e kurz, die Schienen breit und flach, die Tarsen sind seitlich ziemlich abgeflacht, unten beborstet. — L ä n g e (von dem Clypeus bis zum Hinterrand der Flügeldecken): 18 mm.

Holotypus ♂: UdSSR, Rengen-tau Gebirge, 1600 m, 19. IV. 1973, N. TERENTJEV (im Museum Budapest).

Nächst verwandt mit *M. uralensis* PALLAS, 1773; es gibt aber sehr wichtige Unterschiede. *M. uralensis* besitzt vollkommen parallelen Halsschild, welcher vorn nicht eckig, sondern breit abgerundet ist, die Mitte zwar ein wenig eingedrückt und gröber punktiert, aber nicht rugulos und nackt, Flügeldecken seitlich mit schärferem Längsseiteneindruck und ohne Behaarung, ebenfalls wie die Tergite des Abdomens nackt. Von den übrigen Arten der Untergattung weit entfernt.

### *Meloë* (*Eurymeloë*) *schmidi* sp. n.

Die kleinste Art der Gattung. Vollkommen schwarz, glänzend. K o p f quadratisch, Stirn flach, hinter den Augen der Quere nach in einem breiten Streifen dicht, runzelig, fein punktiert, die Mitte vorn und seitlich an den Schläfen sowie am Scheitel grob und separiert punktiert, der Grund glänzend, ohne Längsmittelfurche. Die Augen sind klein, nierenförmig und aus der Wölbung des Kopfes nicht heraustretend. Schläfen parallel, Scheitel beiderseits breit abgerundet, die Mitte ziemlich gerade abgestutzt. Clypeus klein, parallel, grob punktiert, von der Stirn durch eine Querfurche geteilt. Die Behaarung ist kurz und spärlich, borstenartig. F ü h l e r dünn, fadenförmig, vom 6. Glied an sind sie vollkommen zylindrisch und parallel, die vorletzten Glieder etwa andert-halbmal so lang wie breit, das Endglied sehr lang, spitzwinklig. Oberseite mit abstehenden, spärlich stehenden Borsten und vom 6. Glied an mit äußerst feiner, staubiger, anliegender Behaarung. H a l s s c h i l d quadratisch, breiter als lang, Seiten leicht gebogen, die Vorderecken breit abgerundet, Hinterecken ebenfalls abgerundet, die Mitte der Scheibe beiderseits vorn tief eingedrückt, außerdem die Basis in der Mitte und die Mittellinie bis zum Vorderrand breit eingedrückt, sonst ziemlich flach. Oberseite äußerst grob und vollkommen unpunktiert, spärlich dunkel behaart. F l ü g e l d e c k e n an den Schultern gebogen verbreitert, der Seitenrand bildet eine stumpfe, nach hinten erloschene Kante, an der Basis neben den Schultern innen etwas eingedrückt. Oberseite grob gerunzelt, spärlich mit bräunlichen, ziemlich langen Haaren besetzt. Die A b d o m i n a l t e r g i t e sind in der Mitte sehr spärlich mit einzelnen Punk-



ten versehen, sonst ist der Grund erloschen chagriniert und etwas gerunzelt, bräunlich und spärlich behaart, letztes Abdominalsternit des ♂ dreieckig ausgeschnitten und die kurzen Lappen mit je einer fast spitzwinkligen Ecke, die Seite lang schwarz behaart. *Beine* kräftig, spärlich und grob mit Borsten bedeckt, die Schienen sind ziemlich dünn, im Querschnitt oval, Tarsen lang, das 1. Glied der Hintertarsen so lang wie die gemeinsame Länge des 2. und 3., der äußere Enddorn der Hinterschienen lang und dünn, das Ende schräg abgestutzt. — *Länge* (von der Oberlippe bis zum Hinterrand der Flügeldecken): 4 mm.

Holotypus ♂: Indien, Sikkim, Coma Sechen, 16 700 ft, 3. VI. 1959, leg. F. SCHMID; Paratypen: 2 ♀ aus demselben Fundort (alle in der Sammlung des Ungarischen Naturwissenschaftlichen Museums, Budapest).

Diese Art ist vor allem durch den sehr kleinen Körper, die Skulptur und Behaarung, resp. Beborstung der Oberseite sowie durch die Form der Fühler charakteristisch. Unter den Arten der Untergattung *Eurymeloë* gibt es keine Art, bei welcher die Endglieder vollkommen parallel wären, und meist sind sie auch viel dicker, die vorletzten Glieder sind entweder verkehrt trapezförmig oder faßförmig, d. h. sie sind nicht parallel. Außerdem die Halsschildmitte der Länge nach durchziehend eingedrückt, auch die Scheibe vorn beiderseits eingedrückt, und die Oberseite äußerst grob, spärlich ungleich punktiert.

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SCANNING ELECTRON MICROSCOPIC STUDIES  
ON SOME EUROPEAN SPECIES  
OF THE GENUS SYPHACIA  
(NEMATODA: OXYURIDAE)

By

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The paper presents new data on the ultrastructure of the species *Syphacia agraria* SHARPILO, 1973, *S. vanderbrueli* BERNARD, 1961, and *S. montana* YAMAGUTI, 1943, obtained by scanning electron microscopy.

We have studied the ultrastructure and external morphology of three species of the genus *Syphacia* SEURAT, 1916, redescribed in the paper by TENORA and MÉSZÁROS (1975) on the basis of classic criteria and observations by a light microscope. For the scanning electron microscopy (SEM), we used the following material: four females of *S. agraria* from *Apodemus agrarius*, three females of *S. vanderbrueli* from *Micromys minutus*, one female of *S. montana* from *Microtus nivalis*, and two females of the same species from *Pitymys subterraneus*. After ultrasonification, the nematode specimens were studied by a scanning electron microscope Cambridge type at the University in Oslo. In the studies of the ultrastructure of body surface of *Syphacia*, we considered the papers by OGDEN (1971), TENORA, WIGER, BARUŠ (1977), WIGER, BARUŠ, TENORA (1977), and that by QUENTIN (1971) and HARTWICH (1975) dealing with the morphology of these nematodes studied by light microscopy.

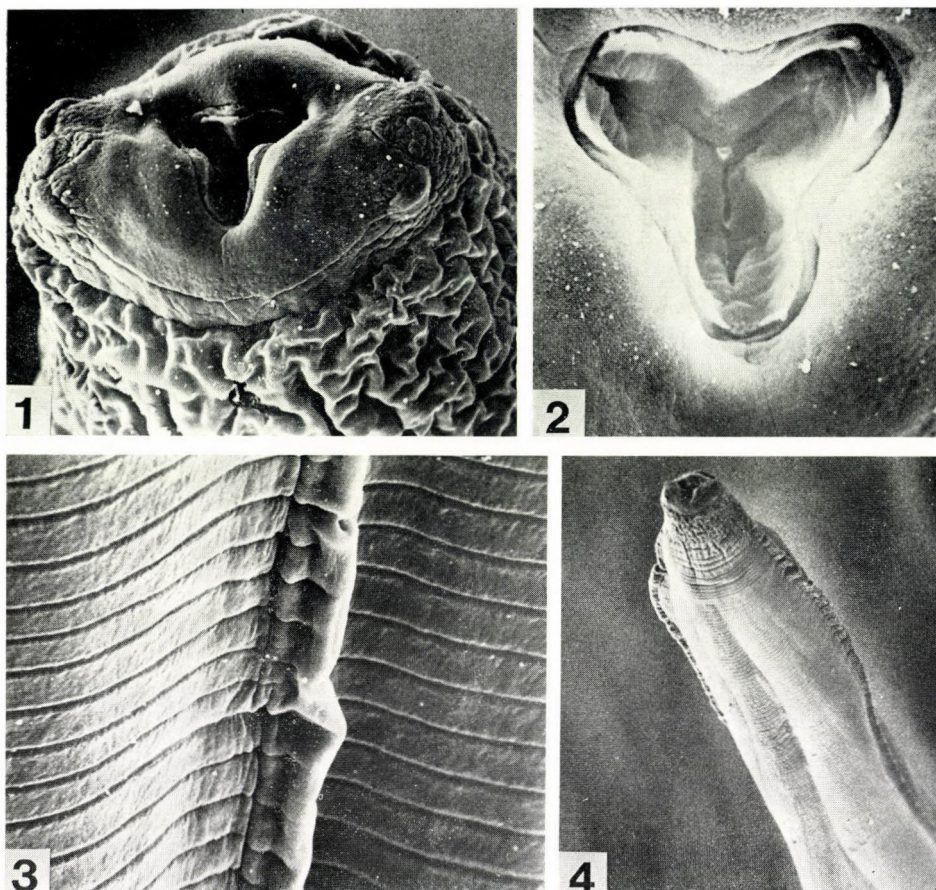
RESULTS

1. *Syphacia agraria* SHARPILO, 1973

Plateau cephalic rounded, with smooth surface. Facial mask oval. Mouth triangular, lips low, inconspicuously divided, with smooth surface (Fig. 1). Papillae of inner circle indistinct. Submedial papillae lateral, hemispherical, two on each side. Amphids slightly shifted near to mouth opening. Zone of cuticle with bosses situated close to amphids, between submedial papillae. Dorsal and ventral sides of head collar without bosses.

Buccal cavity with three triangular teeth with marked medial longitudinal thickening (Fig. 2). Small denticles on transverse ribs of teeth could be observed. Valvular widening present.





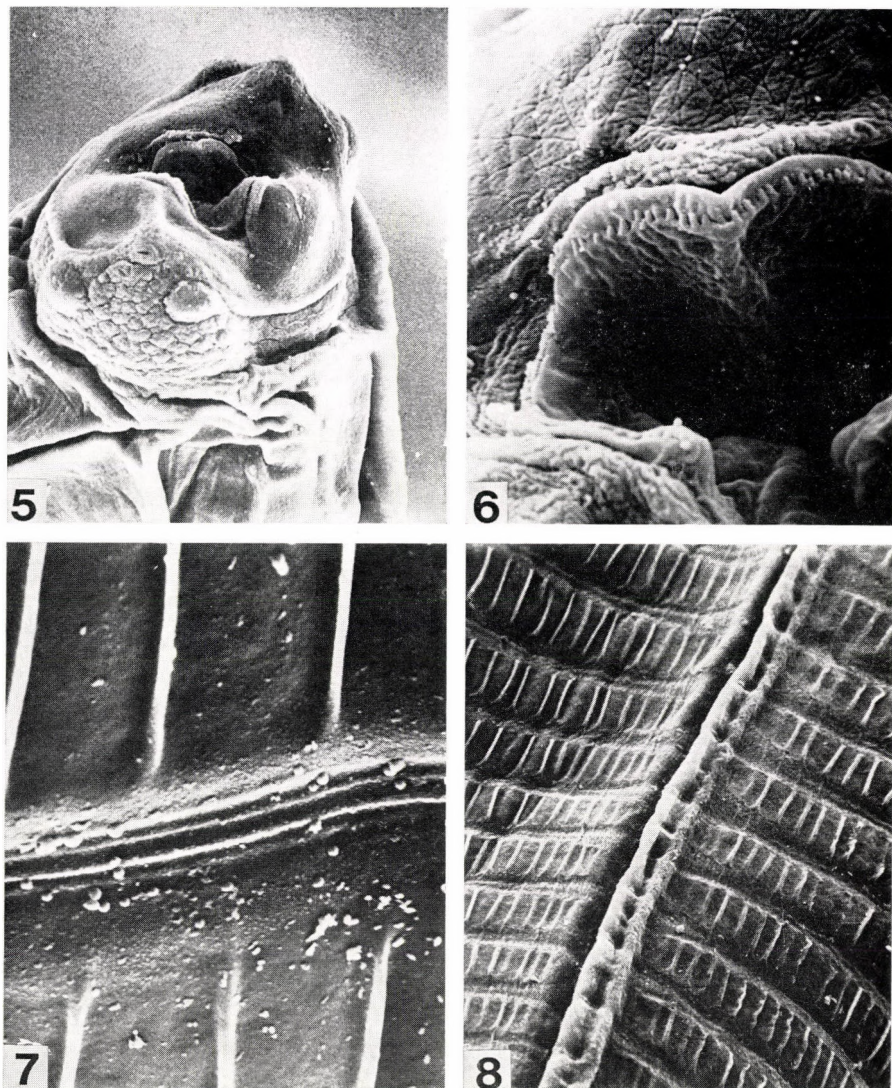
Figs. 1—4. *Syphacia agraria* SHARPILO, 1973. 1 = Plateau cephalic and facial mask. Lateral zone with bosses. Magnification  $2000\times$ ; 2 = Mouth opening with three teeth. Magnification  $5500\times$ ; 3 = Structure of cuticle and detail of lateral ala. Magnification  $3000\times$ ; 4 = Anterior end of body, general view (ventral view). Magnification  $300\times$

Body cuticle transversely striated. Longitudinal septa absent. Transverse striations without supplementary structures (Fig. 3). Cuticle in cervical part of body irregularly undulate. Lateral alae situated behind area of wrinkled cuticle, widened in anterior part (Fig. 4) and slightly narrowing posteriorly. Lateral alae massive in section, rounded, with indistinct, irregular, transverse segmentation on surface.

## 2. *Syphacia montana* YAMAGUTI, 1943

Plateau cephalic slightly oval, smooth surface. Papillae of inner circle indistinct. Facial mask bordered on each side with two submedial papillae and one amphid. Submedial papillae hemispherical. Cuticular rim present and co-





Figs. 5—8. *Syphacia montana* YAMAGUTI, 1943. 5 = Anterior end of body (lateral view), cuticular rim with conspicuous bosses. Magnification 1800  $\times$ ; 6 = Detail of subventral tooth with transverse ridge of small denticles. Magnification 6500  $\times$ ; 7 = Detail of transverse cuticular striation and junction of longitudinal septa. Magnification 10,000  $\times$ ; 8 = Ultrastructure of cuticular and of lateral ala. Magnification 2000  $\times$

vered with conspicuous bosses, flat from dorsal and ventral sides. From lateral side, they reach between submedial papillae up to amphids (Fig. 5).

Mouth triangular, relatively deeply divided, with three lips. Buccal cavity with three sclerotized teeth, supported by medial longitudinal ribs. Ridge of



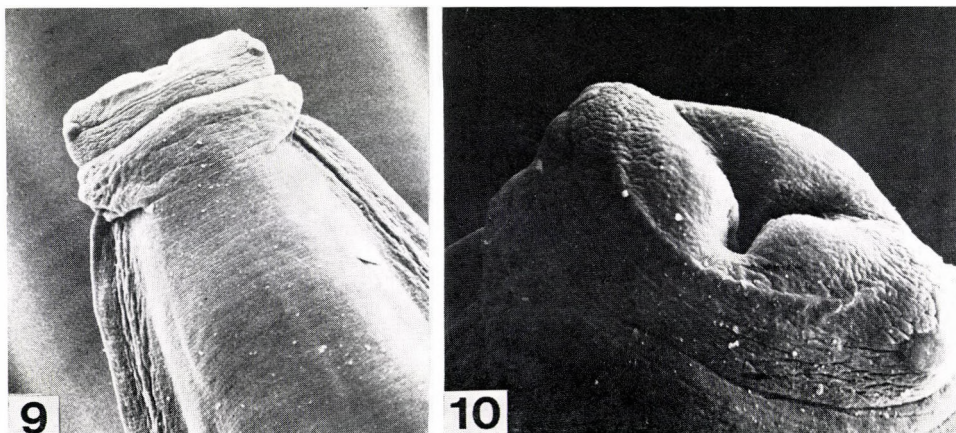
small denticles present near upper margin on inner side of each tooth. Denticles (about 26 per ridge) mostly higher than wide (Fig. 6).

Cuticle smooth immediately below head collar, then transversely striated. Transverse cuticular striations of complicated structure; except rounded margins, two parallel transverse ridges decurrent in them (Fig. 7). Transverse segments of cuticle covered with longitudinal septa. Lateral alae relatively low, irregularly transversely segmented. In proximity of lateral alae, transverse striations of cuticle with a diffused character. Longitudinal septa reaching relatively close to lateral alae (Fig. 8).

### 3. *Syphacia vanderbruei* BERNARD, 1961

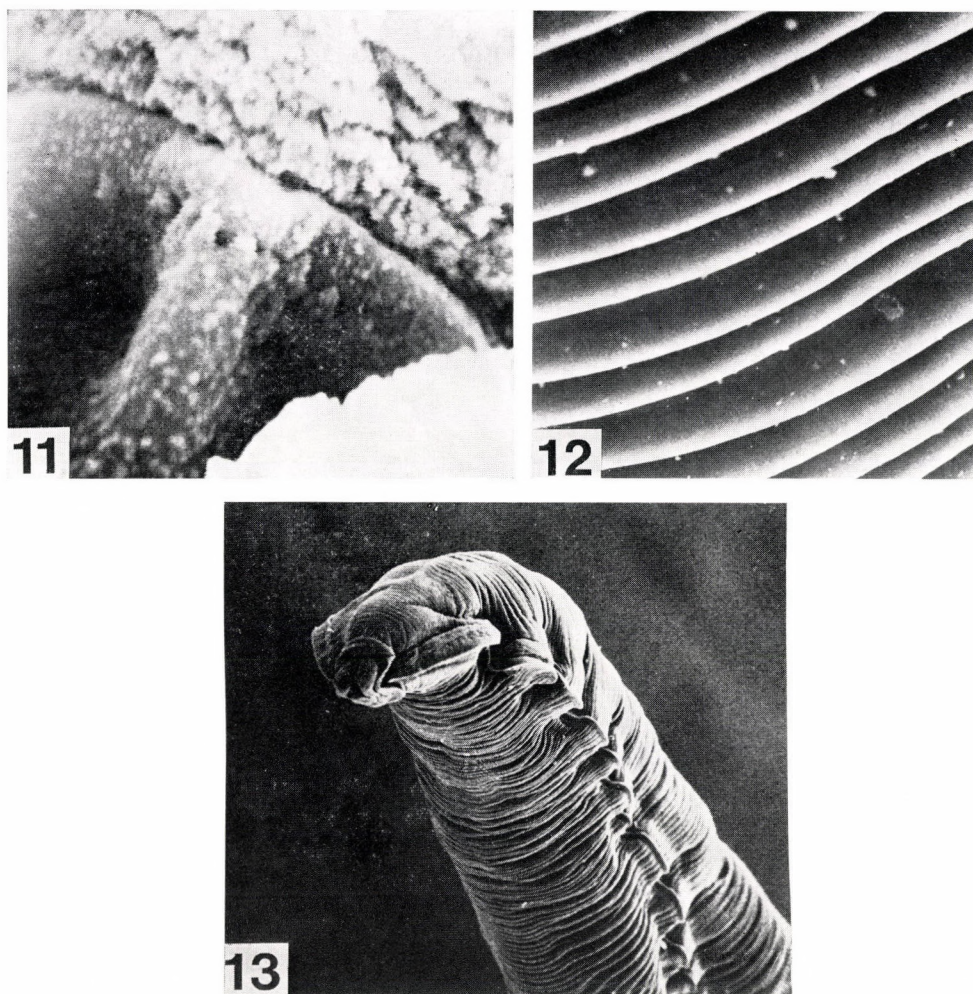
Plateau cephalic distinctly oval, of large size. Facial mask oval. Head part distinctly separated from remaining parts of body, cervical widening of cuticle forming cervical collar. This latter finely transversely striated on dorsal and ventral sides and irregularly undulate on lateral sides (Fig. 9).

Mouth triangular, three massive lips separated from one another by deep incisions. Papillae of inner circle indistinct. Submedial papillae hemispherical, situated laterally, two on each side. Amphids lying slightly higher between papillae. Band of cuticle with inconspicuous elongated bosses decurrent between plateau cephalic and cuticular collar. On lateral side, bosses reaching between submedial papillae up to bases of lips (Fig. 10). Buccal cavity with three sclerotized teeth, with margins not reaching tips of lips. Teeth supported by longitudinal medial rib and provided with a transverse ridge of small denticles on inner side (Fig. 11). Number and shape of denticles could not be exactly determined.



Figs. 9–10. *Syphacia vanderbruei* BERNARD, 1961. 9 = Anterior part of body (ventral view). Magnification 1000 $\times$ ; 10 = Plateau cephalic and cuticular collar (ventral view). Magnification 2000 $\times$





Figs. 11—13. *Syphacia vanderbrueeli* BERNARD, 1961. 11 = Detail of upper margin of tooth with longitudinal rib and transverse ridge of small denticles. Magnification  $20,000\times$ ; 12 = Transverse striations of cuticle in anterior part of body. Magnification  $3000\times$  13 = Anterior end of body with lateral alae (general view). Magnification  $300\times$

Large lateral alae wide in anterior part of body and narrowing posteriorly. Their surface of almost the same sculpture as that of body. Upper margin of lateral alae buried into lower margin of cervical collar (Figs. 11—12). Body cuticle with very fine transverse striations not joined by longitudinal septa. Rounded transverse striations forming on surface of cuticle at contraction (Fig. 13).



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REVISION OF PRIESNERIUS GEN. N.  
AND NOTES ON BIFIDOCEROPALES PRIESNER  
(HYMENOPTERA: CEROPALIDAE)

By

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(Received 14 November, 1977)

Author considers the subgenera *Bifidoceropales* and *Aceropales* as distinct genera. *Aceropales* PRIESNER charged to *Priesnerius* gen. n. [ICZN Article 13(b)]. *Ceropales unicolor* GUSSAKOVSKIJ is synonymized with *Bifidoceropales pygmaeus* (KOHL). Designations of holo- and lectotypes are given and distribution data appended for the following species: *Ceropales unicolor*, *Bifidoceropales pygmaeus*, *Priesnerius deserticola*, *P. polychloros*, *P. thihensis*, *P. honorei*, *P. bogdanovi* and *P. sabulosus*. *P. tobiassi* sp. n. is described, and new status is established for *Ceropales maculata* var. *nigra*. The most important characteristic marks of the species are introduced in a key of all so far known species of the genus *Priesnerius*.

WOLF (1965) and PRIESNER (1969) referred to *Bifidoceropales* and *Aceropales* as subgenera of the genus *Ceropales* but I consider them as distinct genera like the *Ceropales* s. str. itself on the basis of my explanation (MÓCZÁR, 1978). *Aceropales* PRIESNER is changed to *Priesnerius* **subg. nov.** according to Article 13(b) ICZN.

The examined material originates predominantly from the following collections (after the locality names in brackets): the Zoological Institute of the Academy of Sciences, Leningrad (V. TOBIAS), Rijksmuseum von Natuurlijke Historie, Leiden (I. T. WIEBES), Eidg. Technische Hochschule, Zürich (P. BOVEY and W. SAUTER), Naturhistorisches Museum Zoologische Abteilung, Wien (M. FISCHER), Ministry of Agriculture, Dept. of Plant protection Dokki-Cairo (ABDEL-KH. MOUSTAFA), Faculte des Sciences Agronomiques de l'état Zoologie Générale et Faunistique, Gembloux (R. WAHIS), Zoological Department of the Hungarian Natural History Museum, Budapest (J. PAPP). I express my grateful acknowledgements for the loan of the material. The key introduces all species known so far, the detailed locality data intend to promote the explanation of the zoogeographical position of the rarer Asiatic species.

*Bifidoceropales* PRIESNER **stat. n.**

*Bifidoceropales* (subgenus) WOLF, 1965, Nachr. Nat. Mus. Aschaffenburg, H. 72: 38 ♀♂  
*Bifidoceropales*: 1969 PRIESNER, Naturkundl. Jb. Linz: 115, 118—119 ♀♂

*Bifidoceropales* as subgenus with *Ceropales pygmaeus* KOHL, 1880, ♀ ♂ typ subg. was erected by WOLF, however, it was later characterized by PRIESNER as follows: "Klauen der Beine I. und II. gespalten. Kopf und Thorax deutlich, aber fein und dicht punktiert. Fühler dünn und lang". I suggest to modify the description with the following characters: Both claws of fore (♀) and middle (♀ ♂) legs bifid, with a long, apressed, obliquely truncate subapical tooth; inner



claw of fore leg on the male very deeply split owing to the unusually large, not truncate inner tooth basally. Inner side of the last tarsal joint of fore leg deeply emarginated. Both claws of hind legs at least rectangularly curved. Frons mostly with very dense, distinct or fine punctures, sometimes finely granulated and sometimes also with scattered larger shallow punctures (Pl. I., Fig. 1). Mesonotum also with fine dense punctures, but always also with scattered larger and deeper punctures. Antennae usually slender and long, but sometimes shorter and stouter. Labrum large, conspicuously exposed; eyes divergent dorsally, their inner margins concave above. Propodeum short, uniformly broad. Last segments of female strongly compressed.

Type-species: *Ceropales pygmaeus* KOHL, 1880 ♀ ♂

The following species belong into *Bifidoceropales*: *Ceropales mexicana* FOX, *C. nigripes* CRESSON, *C. bipunctata* SAY, *C. elegans* CRESSON, *C. varipes* SHUCKARD, *C. pacifica* TOWNES, *C. rugata* TOWNES, *C. femoralis* CRESSON, *C. hatoda* BRIMLEY (key to these Nearctic species and to their subspecies see TOWNES, 1957); *C. mlokozewitzi* RADOSZKOWSKI and *C. punctulata* CAMERON may also belong in this complex.

### *Bifidoceropales pygmaeus* (KOHL)

*Ceropales pygmaea* KOHL, 1880, Verh. zool.-bot. Ges. Wien, **29**: 402 n. 6 ♂

*Ceropales unicolor* GUSSAKOVSKIJ, 1931. Ann. Mus. Zool. Acad. Sci. l'URSS, **32**: 9 ♀

*Ceropales pygmaeus*: 1947, BEAUMONT, Mitt. Schweiz. Ent. Ges., **20**: 511 ♀ ♂

*Ceropales* (*Bifidoceropales*) *pygmaeus*: 1965, WOLF, Nachr. Nat.-Mus. Aschaffenburg, H. **72**: 38 ♀ ♂

*Ceropales* (*Bifidoceropales*) *pygmaeus*: 1969, PRIESNER, Naturkundl. Jb. Linz: 115, 118—119.

Specimens examined: Switzerland: St. Pauls, Tirol 1887 (1 ♂) SCHLETTERER (Vienna). — France: Sylvéreal B. d. r. 23. VIII. 962 1 ♂ AUBERT (Budapest). — Hungary: see MÓCZÁR, 1954 (Budapest). — Italy: Adria IX. 933 GIORDANI SOIKA 1 ♀ (Budapest); Toscana Pietrasanta 20. VII. 947 1 ♂ CERESA (Budapest); Bozen 883 KOHL 1 ♂; ? WTHM, 1 ♂ (Vienna); Miramare 18. VII. 962 1 ♂ (Vienna); Triest 25. IX. 1 ♀, 8. IX. 1 ♂ GRAEFFE (Vienna). — Egypt: Sakkarah 897 1 ♀ SCHMIEDEKNECHT (Vienna). — USSR (Asia-): Turkmen SSR: Murgabskoe, Gasudarevo Imenie 17. VI. 915 1 ♀ GUSSAKOVSKIJ (Leningrad). — Uzbek SSR: Guzar 19. V. 929 1 ♀ GUSSAKOVSKIJ (Budapest). — Kirgiz SSR: "Perovsk, 12. VII. 1926 RUZAEV", "*Ceropales unicolor* m. ♀ V. GUSSAKOVSKIJ" with GUSSAKOVSKIJ's original writing, "k. Gussakovskiogo" (Budapest). — Eastern Kazach. SSR: "Semipalatinsk", "*Ceropales unicolor* m. sp. typicum", "F. MORAVICA", a small round gold coloured label with GUSSAKOVSKIJ's hand-writing, 1 ♀ (Leningrad). — China: Harbin 15. VII. 1943 1 ♂ ALIN (Zürich).

The holotype of *C. pygmaea* KOHL originates from "Gries bei Bozen auf *Phragmites* 8. Juli" according to KOHL's diagnosis. The above mentioned specimen from Bozen, collected by KOHL in 1883 and labelled in KOHL's hand-writing (in red ink) is to be considered probable the holotype. GUSSAKOVSKIJ did not designate the holotype of *C. unicolor* in his description, therefore I select the specimen from Semipalatinsk, from the original material, labelled with the author's hand-writing as lectotype (Leningrad); the specimen from Petrovsk also belongs to the original material now designated as paralectotype, Hym.

Typ. No. 3654 (Budapest). GUSSAKOVSKIJ (1931) could not separate his *C. unicolor* from *C. pygmaeus* KOHL nor from *C. mlokosewiczii* RADOSZKOWSKI, since both were unknown to him. According to GUSSAKOVSKIJ's opinion the identify of the above mentioned species is improbable on account of the large geographical distance of their localities. BEAUMONT (1947) synonymized the two species on the basis of the descriptions. I confirm the latter's opinion after the examination of the type specimens. Pronotum and propodeum of the lectotype black, without any pale spots. They are distinct on the paralectotype and the spots are also distinct on the specimens identified later by GUSSAKOVSKIJ. The species is easily distinguishable from the other species by the largely black colour of body, by the very dense and deep punctured frons (Pl. I., Fig. 1), by the row of larger deep punctures in pronotum (Pl. I., Fig. 2), by the acute impression of propodeum medially (♀ ♂) (Pl. I., Fig. 4), by the obtuse angle of the truncated last sternite (♀) or by the deeply excised and white marked last tergite (♂).

Distribution: West, Central, South and Eastern Europe; in Asia: Turkmen, Uzbek, Kirgiz and Kazach SSR; China.

### **Priesnerius gen. n.**

*Aceropales* (subgenus) PRIESNER, 1969, Naturkundl., Jb. Linz: 115

PRIESNER failed to designate a type-species for his new genus-group taxon, *Aceropales*, therefore the name is not nomenclatorially available. For this distinct group of species I propose the name *Priesnerius* gen. n., based on *Ceropales honorei* PRIESNER, 1955. PRIESNER characterized the subgenus *Aceropales* as follows: "... die Hinterklauen normal gebogen sind, wie bei anderen Pompilinae. Hierher gehören die nordafrikanischen Arten *honorei* PR., *tihensis* PR. und *deserticola* PR., von denen die beiden ersten feingezähnte Klauen haben, die zuletzt genannte Art jedoch ganz ungezähnte Klauen hat". On the basis of the lectotype and paralectotype of the species I suggest to delete the last clause: "die zuletzt genannte Art jedoch ganz ungezähnte Klauen hat". Namely, all claws of *deserticola* and the claws of hind legs (♀) and the same of the middle and hind legs (♀ ♂) in *honorei* have subapical tooth; all claws of *tihensis* are without a subapical tooth. The diagnosis should be completed thus: last tarsal joint of fore legs asymmetrical (♂) or symmetrical (♀). The inner side of the last tarsal joint of the fore legs deeply emarginated on male. Both claws of the hind legs usually with minute erect tooth on female and male, in some specimens [e.g. *A. polychloros* GUSSAKOVSKIJ, *A. tihensis* (PRIESNER)] without a tooth. In the *P. polychloros* the claws are strongly curved at 45° apically. Labrum large, conspicuously exposed; eyes divergent dorsally, their inner mar-



gins concave above. Propodeum short, uniformly broad and rather flat at least on its two-thirds part posteriorly in profile. Last segments of female strongly compressed.

Type species: *Cerpales honorei* PRIESNER, 1955 ♀ ♂

The following species belong into *Priesnerius*: *Cerpales opacior* PRIESNER, *C. deserticola* PRIESNER, *C. polychloros* GUSSAKOVSKIJ, *C. tihensis* PRIESNER, *C. honorei* PRIESNER, *C. niger* RADOSZKOWSKI, *Priesnerius tobiassi* sp. n., *Cerpales bogdanovi* RADOSZKOWSKI, *C. sabulosus* F. MORAWITZ.

## KEY TO THE WORLD SPECIES OF PRIESNERIUS

♀ ♂

- 1 Abdomen largely yellow-ivory white, segments more or less rufous basally, when tergites black basally then at least pronotum brownish rufous to a great extent. Other parts of thorax often partly rufous. Legs usually ferruginous with yellow markings ..... 2
- Abdomen black, marked with ivory-white or deep yellow, never rufous, at most anterior margin of light band of tergites narrowly brownish. Pronotum black with a yellow or white band, sometimes entirely yellow. Other parts of thorax black white or yellow spots, never rufous ..... 4
- 2 Antennal joint 1 nearly straight at outer margin and only moderately rounded inside. Antennal tubercle black or with a yellow dot. Abdominal tergites rufous, more or less broadly margined behind with ivory-white. Further parts rufous: antennae at base and beneath or wholly, legs (except the yellow lines). Yellow are: frons below, labrum and clypeus, excavation of eyes, posterior orbits, antennal calli (sometimes), antennal joints 1 and 2 beneath, hind margin of prothorax, median line (posteriorly) and lateral margins of scutum, raised parts of scutellum and postscutellum, hind angles of propodeum, sometimes up to middle and lines and spots on legs. Propodeum finely sculptured, with fine silky pubescence. 5—6 mm ..... **opacior** (PRIESNER)
- Antennal joint 1 shorter, scarcely longer than broad, strongly, nearly semicircularly rounded inside. Antennal tubercle yellow. Abdominal segment not always rufous. Propodeum conspicuously flat in profile, upper margin scarcely convex at base, straight along its three-quarters declivous part. Postnotum very narrow, sharply extended in an acute triangle into propodeum medially ..... 3
- 3 Posterior-laterale process of pronotum reach also the posterior part of tegulae (Pl. II., Fig. 14), conspicuously flattened above with more hyaline spots. Body usually extensively light (Pl. II., Fig. 13), pronotum and abdomen almost entirely rufous with pale yellow bands (♀), or body rufous with pale yellow spots and bands (♂). Claws of hind legs only slightly curved, always with a subapical tooth (♀♂). Occiput between eyes usually with a yellow streak. Middle and hind tibiae rufous, lined outside with yellow. Abdominal segments nearly wholly yellow, only segment 1 at base more or less extensively orange, 2 at base (sometimes only at middle), 3 sometimes also orange at base. Coxae outside more extensively yellow. Legs of small males nearly black. Wing veins dark, but costa and pterostigma testaceous. Head almost smooth and shining around ocelli. Posterior margin of pronotum smooth and shining, raised. Punctures of mesonotum scattered (Pl. II., Fig. 14). 4.5—5 mm ..... **deserticola** (PRIESNER)
- Posterior-lateral process of pronotum reaching only to anterior part of tegulae (Pl. II., Fig. 15), not flattened and without hyaline spots. Body largely black, with ivory spots or bands on lower face, eye margins, pronotum, scutellum, postscutellum (Pl. II., Fig. 15), abdominal tergites, etc. are mostly narrowly rufous margined. Sometimes pronotum and abdomen largely rufous with pale yellowish bands. Claws of hind legs strongly curved at 45° apically, without subapical tooth. Occiput between eyes black, at most with a small yellow spot. Middle and hind tibiae dark brown, brownish rufous or sometimes rufous, outside lined with yellow. Abdominal segments black basally, tergite 1 often rufous basally, sometimes (Turkmen SSR) abdomen almost entirely orange-rufous. Last abdominal segment triangular (Pl. II., Fig. 16). Otherwise similar to the former species. 4.5—6 mm ..... **polychloros** (GUSSAKOVSKIJ)



- 4 Propodeum flat, only hardly convex basally, in profile. Claws of hind legs hardly curved. Very small or small species: 3.3–5.5 mm ..... 5
- Propodeum remarkably convex especially basally, declivous part rather flat (in lateral view). Claws of hind legs scarcely curved, but apically bent at  $45^\circ$ . Mostly larger, rarely smaller species: 6.5–10 mm ..... 6
- 5 Head black, only labrum, front margin of clypeus (Pl. III., Fig. 17) laterally broader, antennal joints 1–2 beneath and tegulae yellow. Hind margin of pronotum (Pl. III., Fig. 18), postscutellum, very small spots on propodeum laterally, narrow bands of tergites 1–5, a spot on tergite 6 ivory white, excavations of light bands smaller than in *honorei*. Femora dark brown with a yellow spot apically, tibiae brownish, paler at base, fore and middle tibiae yellow outside. Claws of all legs only hardly curved, without tooth apically. Head (Pl. III., Fig. 17) and mesonotum finely and densely punctured, strongly shining (Pl. III., Fig. 18). Postnotum narrow laterally, broadened medially, irregularly wrinkled. Propodeum finely sculptured, with silky pubescence. Last abdominal segment extended in an acute angle (Pl. III., Fig. 19). Very small species, 3.3 mm ..... **tihensis** (PRIESNER)
- Only upper part of head black; yellow; or partly pale yellow; labrum, clypeus, broad streak below antennal sockets (Pl. III., Fig. 20) to upper part of excavation of eyes (♀) or only a spot in excavation (♂), a small spot on upper part of outer eye-margin (♀♂), antennal joints 1–2 beneath (Pl. III., Fig. 20), posterior margin of pronotum (Pl. III., Fig. 22), lateral spots of pronotum, two small spots on scutellum (Pl. III., Fig. 21), tegulae, postscutellum, small spots on propodeum laterally, broad bands on tergites 1–5, spot on tergite 6, bands of tergites at both sides deeply incised with black; anterior margins of bands very narrowly brownish. All femora and tibiae rufous, tibiae outside with yellow lines, femora with a spot apically. Claws only hardly curved in fore and middle legs (♀) without a subapical tooth, hind legs of female, as well as, middle and hind legs of male with a tooth each. Head (Pl. III., Fig. 20) and mesonotum (Pl. III., Fig. 22) very finely and densely punctured with sparse larger punctures, shining. Postnotum narrow, broadened medially (Pl. III., Fig. 21). Propodeum granulated with silky pubescence (Pl. III., Fig. 21) 3.5–5.5 mm ..... **honorei** (PRIESNER)
- 6 Body entirely black except the small yellow streaks of lower face beginning on clypeus laterally, ending in excavation of eyes (Pl. I., Fig. 7); these streaks being interrupted on clypeus of male. Legs light rufous on female except black coxae and brown trochanters; in male similar to female but bases of all coxae, a spot on hind tibiae apically, as well as, last tarsal joints of hind legs dark brownish black. Head, thorax mat, very densely punctured, frons with few larger punctures (Fig. 6–7), mesonotum (Pl. I., Fig. 6), mesopleura with scattered larger punctures. Postnotum broad, lengthened in an obtuse angle medially and longitudinally wrinkled (Pl. I., Fig. 5) (♀) or wrinkled archedly (♂). Propodeum coarsely rugose (Pl. I., Fig. 5) (♀) or only rugulose (♂). Claws of legs (also the hind ones) only hardly curved, and with a subapical tooth. Last abdominal segment (♀) rounded (Pl. I., Fig. 3), or excised (♂) (Pl. I., Fig. 8). 8–9 mm ..... **niger** (RADOSZKOWSKI)
- Body extensively yellow, pronotum nearly entirely yellow (Pl. II., Fig. 10), yellow spots of propodeum larger than half length of propodeum (Pl. II., Fig. 11). Antennal joints 1–2 yellow, medial ones rufous, last ones black ..... 7
- 7 Propodeum finely granulated basally, with fine, transverse wrinkles medially on its declivous flat part (Pl. II., Fig. 11). All tergites with broad yellow bands posteriorly, on 1 and 2 remarkably broad, and posterior margin of tergite 1 narrowly brown. Claws of hind legs hardly curved and with an erect subapical tooth as in claws of other legs. 6.5 mm ..... **tobiasi** sp. n.
- Propodeum coarsely, transversally wrinkled, finer only on its declivous part (♀) and on male. Usually, tergite 3 (♀) often also 4 (♂) black, 3 (♀) at most with a small yellow spot. Claws of hind legs strongly curved apically at  $45^\circ$  and without a subapical tooth, only claws of fore and middle legs bearing a tooth ..... 8
- 8 Legs mostly rufous and yellow, only coxae often trochanters partly black, hind tibia, as well as, sometimes hind coxa with small black spots before posterior ends. Last 4 antennal joints (sometimes also partly 5th) of female or last 5 of male black. Tergites 1–2 with remarkably broad yellow posterior margin (on male narrower), tergite 3 black, at most with a very small yellow spot (♀), or tergite 3–4 black (♂); posterior margin of tergite 1 with a very narrow brownish-black streak, further tergites with large yellow spots. Lower face, pronotum and propodeum almost entirely, scutellum postscutellum, tegulae yellow, mesopleura with 1 or 2 yellow spots beneath. Larger, 9–10 mm ..... **bogdanovi** (RADOSZKOWSKI)
- Similar to *bogdanovi* but darker. Hind coxae mostly black, rufous only basally, yellow only



apically, base of fore and middle coxae usually blackish. Last 5 (♀) or 6 (♂) antennal joints black. Tergites 1—2 with broad yellow posterior bands, 3 (♀) or 3—4 (♂) black, yellow band of tergite 1 on male interrupted medially. Sometimes mesopleura black. Sculpture of propodeum finer than in *bogdanovi*. Postnotum broad, as in *bogdanovi* longitudinally wrinkled. Usually smaller, 7—8, exceptionally 10 mm ..... **sabulosus** (F. MORAWITZ)

### *Priesnerius opacior* (PRIESNER)

*Ceropales opacior* PRIESNER, 1955, Bull. Soc. Ent. Egypte, **39**: 22, 23 ♀

*Ceropales opacior*: 1966, PRIESNER, Israel Journ. Ent., **1**: 152 ♀

No specimen was examined.

Distribution: Egypt.

### *Priesnerius deserticola* (PRIESNER)

*Ceropales deserticola* PRIESNER, 1955, Bull. Soc. Ent. Egypte, **39**: 23, 24 ♀ ♂

*Ceropales deserticola*: PRIESNER, 1955, Israel Journ. Ent., **1**: 152

*Ceropales (Aceropales) deserticola*: 1969, PRIESNER, Naturkundl. Jb. Linz: 115

Specimens examined: E g y p t: "Manshiet Radwan, 13. 6. 34 Water Mellon", "Egypt-Min. Agric. (Egypt) Coll. R. MABROUK", "*Ceropales deserticola* Pr." in author's handwriting 1 ♀ (Cairo); "Wadi El Tih Egypt 14. 6. 35. Dr. H. PRIESNER", "Paratype" red label, 1 ♂ (Budapest); "Wadi El Tih Egypt 18. 9. 37. Dr. H. PRIESNER", "Paratype" red label 1 ♂ (Vienna); "Fayoum 30. 9. 34", "Coll. ALFIERI Egypte", "Paratype" red label, "*deserticola* Pr." in author's handwriting 1 ♀ (Vienna); Ghizeh, Caire 15. V. 958 1 ♀ PULAWSKI (Budapest); Dahschour, Caire 2. V. 958 1 ♀ PULAWSKI (Vienna).

PRIESNER did not designate the holotype in his description, therefore I select from the original material the specimen from Fayoum, ♀, (Vienna) as lectotype, the following specimens are paralectotypes also from the original material: Manshiet Radwan (♀) (Cairo), Wadi El Tih (♂♂) (Vienna and Budapest, Hym. Typ. No. 3655). This species is very similar to *A. polychloros* (GUSSAKOVSKIJ), the more significant differences are given in the key (Pl. II., Figs. 13—14). In spite of PRIESNER's (1969: 115) remark the claws of the hind legs bear a minute erect tooth (♀♂), as do the fore and the middle ones (♀♂). Only the fore claws and the last tarsal joint of the fore leg of male asymmetrical. Hind claws on the other hand, only hardly curved (♀♂).

Distribution: Egypt.

### *Priesnerius polychloros* (GUSSAKOVSKIJ)

*Ceropales polychloros* GUSSAKOVSKIJ, 1931, Ann. Mus. Zool. Acad. Sci. l'URSS., **32**: 11 ♀

*Ceropales polychloros*: 1977, MÓCZÁR, Ann. Hist.-nat. Mus. Nat. Hung., **69**: 253 ♀ Taf. I. Fig. 5, Taf. II. Fig. 1 ♂ nov.

Specimens examined: C h i n a: "r. Danhe, juzn. Sachzhou, Gashunskoe Gobi, P. KOZLOVA, 27. VII. 95", a small round gold coloured label, "*C. polychloros* n. sp. V. GUSSAKOVSKIJ det.", the species name with the author's original writing, 1 ♀ (Leningrad). — T u r k - m e n S S R: Ašchabad 13. VI. 924 1 ♀ (Budapest); Gasan-Kuli 2. VII. 932 1 ♀ Ushunsky (Leningrad). — K a z a k h S S R: Betpak-dala k. Cholak Espe. 45° 15'—68° 1/2 VII. 1 ♀ ČAZY (Budapest), 1 ♀♂ (Leningrad); Karatay near Djulek Balamurun, 1 ♂ KOSHANTSCHIKOW (Leningrad).

GUSSAKOVSKIY described this species on the basis of a single specimen, consequently the 1 ♀ labelled Danhe etc. is the holotype. The rufous colour of the body varies significantly on the specimens. Segments 1—4 of the holotype and of the specimen from Ašchabad entirely rufous excepting the hind ivory bands, furthermore the holotype from Gobi has mostly rufous legs, while specimens from Gasan-Kuli have only segments 1—3 dark rufous hue. But the same tergites are nearly entirely black, except the small margins proximally in front of the ivory bands and legs are more infuscated on specimen also from Gobi (MÓCZÁR, 1977) and on specimen from Kazakh SSR than on the holotype. Upper side of flagellum rufous and only weakly infuscated on holotype, black on the other specimens. Claws of hind legs without subapical tooth and apically strongly curved at 45°.

Distribution: Turkmen, Kazakh SSR and China.

*Priesnerius tihensis* (PRIESNER)

*Ceropales tihensis* PRIESNER, 1955, Bull. Soc. Ent. Egypte, **39**: 23, 26 ♀

*Ceropales tihensis*: 1966, PRIESNER, Israel Journ. Ent., **1**: 154

*Ceropales (Aceropales) tihensis*: 1969, PRIESNER, Naturkundl. Jb. Linz: 115

Specimen examined: Egypt: "Wadi El Tih Egypt 20. 4. 34 DR. H. PRIESNER". "Holotype" red label, "*tihensis* Pr." with the author's original writing, 1 ♀ (Vienna).

The single female specimen represents the holotype, labelled by the author, although PRIESNER did not designate it in his description. The status of this very small Ceropalid is rather dubious owing to the lack of subapical tooth on the claws. Both morphologically and in colour related to the other species in the key, so this single difference is not enough to erect a new subgenus. The diagnosis is complemented thus: frons convex (Pl. III., Fig. 17), propodeum only at base convex on its one-quarter part, flat on the declivous three-quarters part, in lateral view. Last segment extended in an acute angle (Pl. III., Fig. 19), dark brownish, not black.

Distribution: Egypt.

*Priesnerius honorei* (PRIESNER)

*Ceropales honorei* PRIESNER, 1955, Bull. Soc. Ent. Egypte, **39**: 23, 25 ♀ ♂

*Ceropales honorei*: 1966, PRIESNER, Israel Journ. Ent., **1**: 154

*Ceropales honorei*: 1969, PRIESNER, Naturkundl. Jb. Linz: 115

Specimens examined: Egypt: "Kafr Hakim 21. 11. 25", "Egypt. Min. Agric. (Egypt) Coll. R. MABROUK" 1 ♀ (Cairo); "Sic Tower Suez Road 26. 3. 26", "Egypt Min. Agric. (Egypt) Coll. H. C. EFFLATOUN", "*Ceropales honorei* Pr." with author's handwriting, 1 ♂ (Budapest); "Kerdasa Egypt XI. DR. H. PRIESNER", "Paratype" red label, "*honorei* Pr." 1 ♀ (Vienna); Abou Roasch, Caire 4. IV. 958 1 ♂ PULAWSKI (Budapest).

In the original description neither a holotype nor paratypes were designated, therefore I select the ♀ specimen from Kerdasa, labelled by PRIESNER,



as lectotype (Vienna) and the following specimens as paralectotypes also from the original material: Kafr Hakim ♀ (Cairo), Suez Road ♂ [Hym. Typ. No. 3656 (Budapest)]. I could not designate more paralectotypes from the original material, because the Ceropalid collection of ALFIERI in Cairo, Faculty of Agriculture, Al-Azhar University was unfortunately unable to send me specimens for study.

Distribution: Egypt.

*Priesnerius niger* (RADOSZKOWSKI) stat. n. ♂ nov.

*Ceropales nigra* RADOSZKOWSKI, 1877, in FEDCENKO: Putes. Turkes, 14. II. Zoogeogr. Isl. V. 3. Sphegidae: 14 ♀ n 3 Tab. VI. Fig. 10 (♂?)

*Ceropales maculata* var. (an subsp.?) *nigra*: 1931, GUSSAKOVSKIJ, Ann. Mus. Zool. Acad. Sci. URSS, 32: 7, 22

Specimen examined: Russian SSR (Asia-): Daroga Ruibojga Kutarmakbe (? = Kutomar), 2500—3000 m 21. VI. 838 1 ♂ GUSSAKOVSKIJ (Leningrad). — T a d z h i k S S R : per Anzob, 3600 m, Gissar, 31. VII. 937 1 ♂ GUSSAKOVSKIJ (Budapest). — K a z a k h S S R : Ketkoe Art szo. ekov. Alajsk 20. VII. 928 1 ♂ GUSSAKOVSKIJ (Leningrad).

RADOSZKOWSKI described this species from "Ferghana: Hodzha-Tsiburgan 26. VI. 1871" (Turkmen SSR) 1 ♀, obviously the specimens examined by me do not belong to the original material. RADOSZKOWSKI published the species nova as ♀, an the Table VI, Fig. 10 a female is seen, but in spite of this the explanation is given for a ♂. GUSSAKOVSKIJ did not see the type specimen, nor did he designate the sex of the species. The material examined by me include a female and a male specimen. The species is valid. In fact it is very similar (Pl. I., Figs. 3, 5, 7) to *Ceropales maculatus maculatus* (FABRICIUS), but both claws of the hind legs are gradually and not rectangularly curved and with a short erect subapical tooth, similar to the other claws of middle and fore legs (except the inner one of the fore legs of male, which is very deeply split, bifid, owing to the unusually large, not truncate inner tooth). Last tarsal joint of fore leg (♂) asymmetrical, inner side deeply emarginated. Colouring and sculpture of male (Pl. I., Figs. 6, 8) very similar to the female.

Distribution: Russian, Turkmen, Tadzhik and Kazakh SSR.

*Priesnerius tobiasi* sp. n.

♀. — Length 6.5 mm. Black. Face below antennal sockets, clypeus, labrum, mandibles (except apical half), inner orbits to semicircular excavation of eyes (Pl. II., Fig. 9), small streaks on outer orbits, malar space, antennal joints 1—2, whole pronotum, tegulae (Pl. II., Fig. 10), large spots on scutellum and postscutellum, five-angled spots on propodeum laterally (Pl. II., Fig. 11), remarkably broad bands on tergites 1—2 and bands of tergites 3—6 posteriorly

(Pl. II., Fig. 12), large spots on outer side of coxae, apical spots of fore and hind coxae on outer side, as well as, inner side of fore femora, larger streak on apical two-thirds of middle femora, outer side of fore and middle tibia, basal one-third of hind ones, outer sides of fore and middle metatarsi, yellow. Antennal joints 3—7, apical half of mandibles, narrow apical band of tergite 1, base of femora, inner side of middle femora, medial third of hind tibia, fore and middle tarsal joints 2—5 mostly, as well as, hind tarsal joints 1—5, rufous. Wings only weakly infuscated, stigma and venation brownish. Frons mat, hardly shining, with fine and very dense punctures and with some larger scattered and shallow punctures (Pl. II., Fig. 9); ocelli forming a right angle; pronotum, mesonotum (Pl. II., Fig. 10), mesopleura with very fine and dense punctures and with scattered deeper, larger punctures, interspaces nearly always larger than punctures. Postscutellum slightly impressed medially. Postnotum deep, broadened towards propodeum is an obtuse angle medially, archedly and longitudinally wrinkled (Pl. II., Fig. 11). Propodeum distinctly convex on its basal one-third, flat on its declivous two-thirds medially in lateral view, surface with fine silvery pubescence and with scattered shallow punctures, finely granulated basally and with fine transverse wrinkles medially on its declivous flat part (Pl. II., Fig. 11). Last sternite strongly compressed laterally, only slightly narrowed and broadly truncate apically (Pl. II., Fig. 12). Claws of hind legs hardly curved, claws of all legs with an erect subapical tooth.

♂. — Unknown.

Specimen examined: China: (South-West part of the region Khotan, Sinkiang), "GROMB(CZEWSKI) Kul 15/VIII. 90", "K. F. MORAWITZA" 1 ♀ holotype (Leningrad).

I have named this species in honour of the excellent specialist of Braconidae, DR. V. I. TOBIAS of Leningrad.

This species is related to *bogdanovi* (RADOSZKOWSKI) and *sabulosus* (F. MORAWITZ), but differs especially by the granulated propodeum and by the weakly curved claws of hind legs, latter bearing a subapical tooth.

### *Priesnerius bogdanovi* (RADOSZKOWSKI)

*Ceropales Bogdanovii* RADOSZKOWSKI, 1877, in FEDCENKO: Putes. Turkes. 14. II. Zoogeogr. Isl. V. 3. Sphegidae: 13 ♂, T. VI. F. 9.

*Ceropales bogdanovi*: 1931, GUSSAKOVSKIJ, Ann. Mus. Zool. Acad. Sci. l'URSS, 32: 6, 16 ♀ ♂

Specimens examined: Russian SSR: (Europe-) Astrachan, Kilintschi okr. 25. V. 930 1 ♂ OGLOBLIK (Budapest); Astrachan, e-h. Tehkikupy 25. VI. 927 1 ♀ GUSSAKOVSKIJ (Leningrad); Sarepta 871 BECKER (Vienna) (Asia-) Ak-Metsch bliz Hivy (S from Ural) 23. V. 927 1 ♀ ZIMIN (Budapest). — Azerbaïdzhân SSR: Daghestan, Tuprozk 1. VIII. 960 (Gemblox). — Uzbek SSR: Kutak-Buchara 26. VI. 929 1 ♂ GUSSAKOVSKIJ (Leningrad).

According to RADOSZKOWSKI: "Habitat in valle Sarafschan" (= Serakhs, Turkmen SSR). GUSSAKOVSKIJ's distribution data reads: "In Rossia meridionali ad Volgam inferiorem et in Turkestaniam". Should be interpreted dif-



ferently, since GUSSAKOVSKIJ regarded *sabulosus* F. MORAWITZ as a synonym of *bogdanovi* RADOSZKOWSKI.

Distribution: Russian, Azerbaidzhan, Turkmen and Uzbek SSR.

*Priesnerius sabulosus* (F. MORAWITZ)

*Ceropales sabulosa* F. MORAWITZ, 1891, Horae Soc. Ent. Ross., **25**: 184 No. 24 ♀ ♂

*Ceropales bogdanovi*: 1931, GUSSAKOVSKIJ, Ann. Mus. Zool. Acad. Sci. l'URSS, **32**: 16 ♀ ♂

Specimens examined: Russian SSR (Europe-): "Sarepta", "F. MORAWITZ" "*sabulosa* F. MOR. ♀", a small round gold label, 1 ♀ (Leningrad); "Astrachan, JAKOWLEV", "k. F. MORAWITZ", a small round gold-coloured label, "*Ceropales sabulosa* ♂ F. MOR." 1 ♂ (Budapest); "Ryn-Pesski", "k. F. MORAWITZ", (= Chanskaja Stawka, Mons Bogdo), a small round gold-coloured label, "*Ceropales sabulosa* F. MORAW. ♀" in author's handwriting 1 ♀ (Leningrad). — Uzbek SSR: K-Kutak sz. 3. Buchara 13. V. 929 1 ♂ ZIMIN (Leningrad). — Kazakh SSR: Golodnaya step, Sredne-Aziatskoj zs. d. 19. V. 903 1 ♀ JAKOBSON (Budapest); Karagand 40 km S Zhana-Arka 2. VIII. 960 1 ♀ KERZHNER (Budapest).

This species was described from "Ryn-Pesski.-M-Bogdo", "(Chanskaja Stawka, Mons Bogdo)". Ryn-Pesski lies North from Astrachan, but Mons. Bogdo in the environs of the border of the Kazakh SSR and China. In the material examined by me there were three specimens identified and labelled by author with a small round gold-coloured label. This small gold label used to signify the type-specimens in the Museum of Leningrad. Therefore it is very probable that the specimen from Ryn-Pesski (♀) represents the lectotype and at least the specimen from Astrachan (♂) represents the paralectotype (Hym. Typ. No. 3657 Budapest). Sarepta lies not too far from Astrachan, therefore we can regard the specimen deriving from it also as paralectotype. Though GUSSAKOVSKIJ synonymized this species with *bogdanovi* RADOSZKOWSKI, I suggest the re-establishment of the species on the basis of differences given in the key.

Distribution: Russian, Uzbek and Kazakh SSR, border territories along China.

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### Explanation of the plates

#### Plate I

Figs. 1—2. *Bifidoceropales pygmaeus* (KOHL) ♀, 1 = head; 2 = head and prothorax. — Fig. 3. Last abdominal segments of *Priesnerius niger* (RADOSZKOWSKI) ♀. — Fig. 4. Scutellum-propodeum of *Bifidoceropales pygmaeus* (KOHL) ♀. — Figs. 5—8. *Priesnerius niger* (RADOSZKOWSKI), 5 = scutellum-propodeum ♀; 6 = head-mesonotum ♂; 7 = head-pronotum ♀; 8 = last abdominal segments ♂ (seeing ventrally) (Orig.)

#### Plate II

Figs. 9—12. *Priesnerius tobiassi* sp. n. ♀, 9 = head; 10 = head-mesonotum; 11 = scutellum-propodeum; 12 = last abdominal segments. — Figs. 13—14. *Priesnerius deserticola* (PRIESNER) ♂, 13 = scutellum-propodeum; 14 = mesonotum. — Figs. 15—16. *Priesnerius polychloros* (GUSSAKOVSKI) ♀, 15 = mesonotum-propodeum; 16 = last abdominal segments (Orig.)

#### Plate III

Figs. 17—19. *Priesnerius tihensis* (PRIESNER) ♀, 17 = fore head; 18 = head, pro- and mesothorax; 19 = last abdominal segments. — Figs. 20—22. *Priesnerius honorei* (PRIESNER), 20 = frons, 21 = scutellum-tergite 1, 22 = posterior margin of pronotum and mesonotum (Orig.)



## Plate I

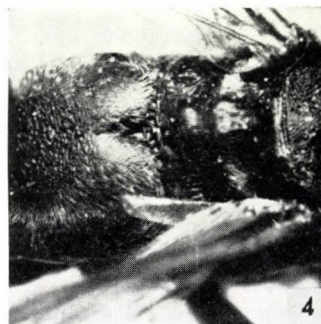
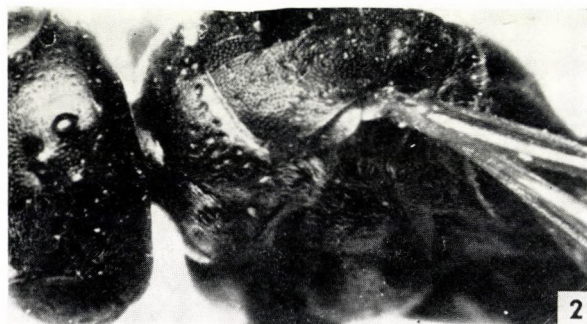
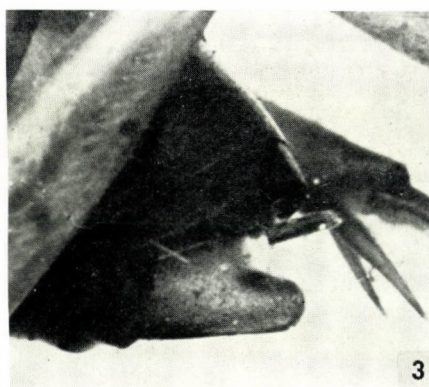
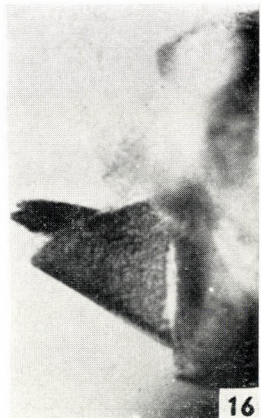
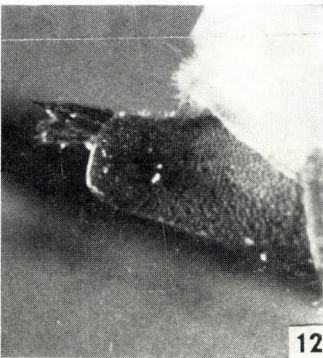
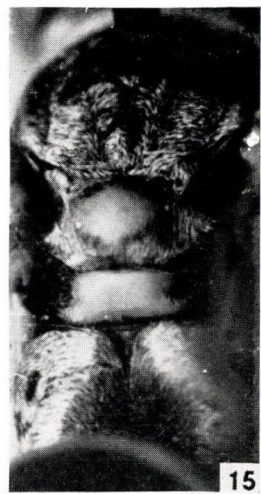
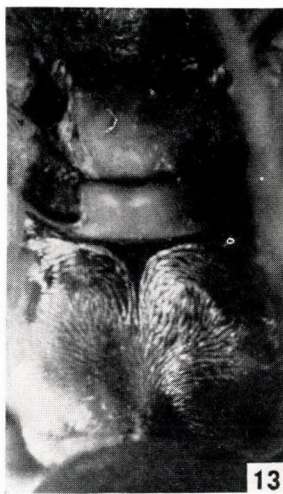
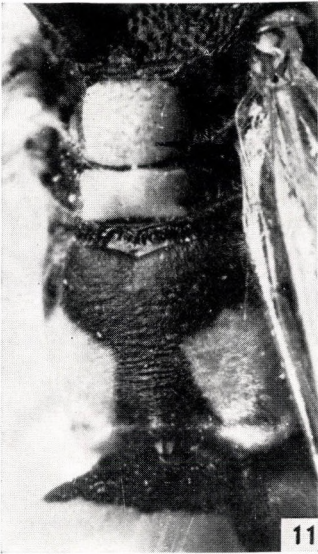
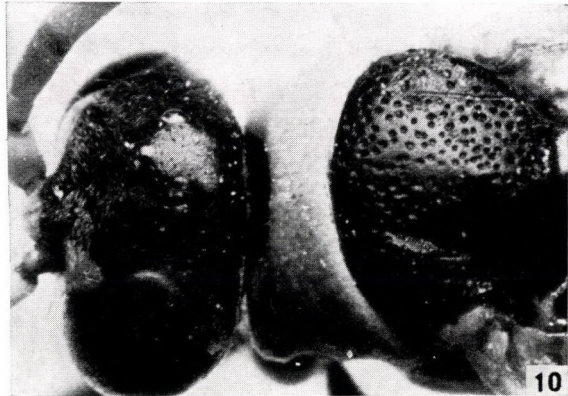


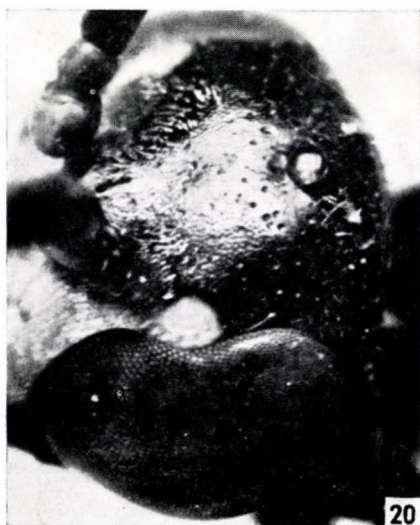


Plate II





## Plate III



## NEW OPIUS WESM. SPECIES FROM HUNGARY (HYMENOPTERA: BRACONIDAE, OPIINAE). I

By

J. PAPP

(Received 1 December, 1977)

Description of three new *Opius* WESMAEL species from Hungary together with their specific differences is given, completed with 13 figures. The new species are *Opius* (*Utetes*) *brutus* sp. n. ♀, *O. (Misophthora)* *discolor* sp. n. ♀ and *O. (Utetes)* *melbus* sp. n. ♀.

### *Opius* (*Utetes*) *brutus* sp. n., ♀ (Figs. 1-3)

The new species is a member of the subgenus *Utetes* FÖRST. and a close ally of *O. (U.) insertus* FISCHER, 1971 (Europe, Japan), and *O. (U.) posticatae* FISCHER, 1957 (Sweden, European USSR: Leningrad, Hungary). The features distinguishing the new species from its nearest two allies may be tabulated as follows:

#### *O. insertus* Ff.

1. Head (in dorsal view) distinctly twice broader than long (55 : 26,  $\times 63$ ), eye obviously longer than temple (16 : 10,  $\times 63$ , Fig. 4).
2. *n. rec.* postfurcal.
3. Second tergite polished, i.e. without any sculpture.
4. Third femur widest at its middle.

#### *O. brutus* sp. n.

1. Head (in dorsal view) almost twice broader than long (48 : 25,  $\times 63$ ) eye somewhat longer than temple (14 : 11,  $\times 63$ , Fig. 1).
2. *n. rec.* interstitial (Fig. 2).
3. Second tergite with rather longitudinal rugulo-striation on its medio-transverse surface.
4. Third femur widest at its distal third.

#### *O. posticatae* Ff.

1. *n. rec.* postfurcal, *d* one-and-a-half times longer than *n. rec.*
2. Propodeum rugulose, laterally with two-three small and uneven to smooth fields.
3. First flagellar joint three times longer than broad.
4. Face subquadrate, i.e. somewhat wider than high.

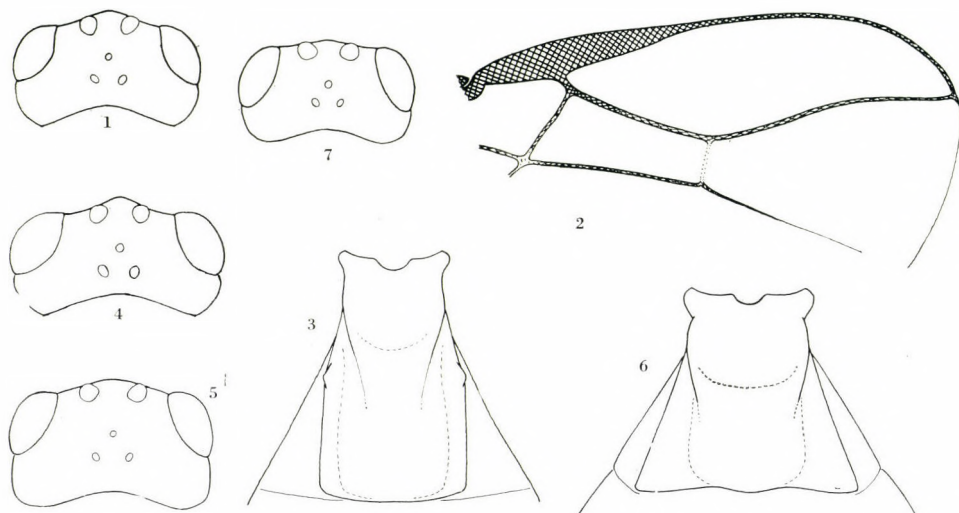
#### *O. brutus* sp. n.

1. *n. rec.* interstitial (Fig. 2), *d* only one-and-a-quarter times longer than *n. rec.*
2. Propodeum evenly rugose to scrobiculate, without any smooth field.
3. First flagellar joint four times longer than broad.
4. Face transverse, 1.4 times wider than high.

Additional features. — ♀. Body 3 mm long. Head (in dorsal view) behind eyes gradually rounded (Fig. 1). Ocelli on an equilateral triangle. Hind two ocelli oval in form and larger than fore ocellus, latter round in form. Distance



between fore and a hind ocelli equal with distance between hind two ocelli. POL : OOL as 8 : 18 ( $\times 100$ ). Eye (in lateral view) twice higher than wide; temple slightly wider than eye measured at the same level of width of eye (20 : 18,  $\times 100$ ). Mandible lacking basal subtooth. Mouth open. Clypeus twice wider than high, smooth. Face smooth, laterally uneven. Cheek as long as basal width of mandible. Frons, vertex and temple polished. Temple completely margined. Antenna long, one-and-a-half times longer than body, 35-jointed.



Figs. 1–3. *Opius (Utetes) brutus* sp. n. ♀: 1 = head in dorsal view; 2 = distal part of right fore wing; 3 = first tergite. — Fig. 4. *Opius (Utetes) insertus* FISCHER: head in dorsal view. — Figs. 5–6. *Opius (Misophthora) discolor* sp. n. ♀: 5 = head in dorsal view; 6 = first tergite. Fig. 7. *Opius (Misophthora) compar* MARSHALL: head in dorsal view

Flagellum attenuating distally, joints normally separated from each other, penultimate joint twice longer than broad.

Thorax (in lateral view) 1.3 times longer than high. Head distinctly wider than thorax between mesonotal tegulae. Pronotum smooth, its anterior margin crenulated. Mesonotum and scutellum polished. Notauli present on declivous part of mesonotum, on its disc absent. Pit of mesonotum deep and dash-like shortly elongated. Prescutellar furrow strongly crenulated. Postaxilla smooth. Sternaulus distinct, crenulated.

Hind femur four times longer than broad. Fore and hind tarsus shorter than respective tibiae. Middle tibia and tarsus equal in length.

Fore wing longer than body. Stigma (Fig. 2) wedge-shaped, five times longer than wide, emitting radial vein proximally though near to middle. *r1* very short, *r2* twice longer than *cuqul*, *r3* arched and nearly twice longer

than  $r_2$  (61 : 36,  $\times 63$ ), and reaching end of wing. *B* closed, emitting *n. par.* near to its middle.

Abdomen as long as thorax, broadest at its third segment, broader than thorax. First tergite (Fig. 3) 1.4 times longer than wide at hind, its sides anteriorly from spiracle converging, posteriorly parallel-sided. Two converging keels merging into rugosity on hind half of first tergite. Surface of first tergite rugose, between two keels smooth to uneven. Further tergites polished, anteriorly each with a row of long piles. Ovipositor sheath (in lateral view) short, half as long as third basitarsus.

Head, thorax and first tergite black, abdomen brownish black. Scape testaceous, above and distally blackish fumous. Anellus and base of first flagellar joint testaceous. Flagellum brownish black. Lower half of clypeus and mandible testaceous, apex of mandible blackish. Tegulae and legs vivid brownish yellow, hind tibia together with middle and hind tarsi somewhat darker. Anterior three sternites brown. Wings subhyaline. Stigma opaque brown. Venation with yellowish brown pigmentation, *dl* and *n. bas.* darker.

♂ and host unknown.

Locality: Mecsek-hgs., Hidasi v. (hgs. = hegység = Mt., v. = völgy = valley), 22 May 1966, 1 ♀ (holotype), leg. L. MÓCZÁR.

Holotype deposited in the Hungarian Natural History Museum, Budapest; Hym. Typ. No. 2440.

### ***Opius* (*Misophthora*) *discolor* sp. n., ♀ (Figs. 5—6)**

The new species represents obviously the subgenus *Misophthora* FÖRST. though propodeum not fully smooth. It stands nearest to *O. (M.) compar* MARSHALL, 1894 (England, Czechoslovakia, Hungary), however, the two species are clearly differentiated by the features tabulated below:

#### ***O. compar* MARSH.**

1. Body 1.6—1.8 mm long.
2. Head (in dorsal view) a little less than twice as broad as long (48 : 25,  $\times 100$ ). Head behind eyes constricted, i.e. head between temples not so broad as between eyes (Fig. 7).
3. Clypeus thrice wider than high.
4. First tergite 1.3 times longer than wide at hind, its sides anteriorly from spiracles moderately converging, posteriorly parallel.
5. *nv* indistinctly postfurcal.
6. Antenna 24—26-jointed.
7. Radial vein reaching tip of wing.

#### ***O. discolor* sp. n.**

1. Body 2.2 mm long.
2. Head (in dorsal view) distinctly less than twice as broad as long (57 : 32,  $\times 100$ ). Head behind eyes gradually rounded, i.e. head between eyes and temples equalling in breadth (Fig. 5).
3. Clypeus twice wider than high.
4. First tergite slightly wider at hind than long, its sides straight and strongly converging anteriorly (Fig. 6).
5. *nv* distinctly postfurcal.
6. Antenna 32-jointed.
7. Radial vein only approaching tip of wing.

The new species also resembles *O. (M.) laevigatus* FÖRSTER, 1862 (Germany), however, they differ from each other in the following features:



**O. laevigatus** FÖRST.

1. Head (in dorsal view) close behind eyes moderately rounded, temple distinctly shorter than eye, and head broadest between eyes.
2.  $r_2$  one-and-a-half times longer than *cuqul*.
3. Antenna 24-jointed.
4. Face one-and-a-half times wider than high.
5. First tergite anteriorly from spiracles with moderately converging, posteriorly with subparallel sides.

**O. discolor** sp. n.

1. Head (in dorsal view) gradually rounded, temple indistinctly shorter than eye, and head equalling in breadth between eyes and between temples (Fig. 5).
2.  $r_2$  twice longer than *cuqul*.
3. Antenna 32-jointed.
4. Face 1.2 times wider than high.
5. First tergite with evenly converging sides anteriorly (Fig. 6)

Additional features. — ♀. Head (in dorsal view) distinctly broader than thorax between tegulae (38 : 28,  $\times 63$ ). Temple and eye (in lateral view) equaling in width measured at the level of greatest (or horizontal) width of eye; temple weakly narrowing both below and above. Ocelli small and forming an equilateral triangle, its base somewhat longer than side. Fore ocellus round, hind pair somewhat elliptical. Distance between hind two ocelli twice as long as greatest diameter of an ocellus. POL : OOL as 7 : 13. Eye (in lateral view) almost one-and-a-half times higher than wide (28 : 19,  $\times 100$ ). Clypeus twice wider than high, together with face uneven, shiny. Distance between tentorial pits somewhat more than twice as great as that between pit and eye. Cheek shorter than basal width of mandible (8 : 11,  $\times 100$ ). Mouth open. Below its base mandible with a distinct subtooth. Frons, vertex and temple polished. Temple completely margined. Antenna a quarter longer than body, apically attenuating. First flagellar joint thrice longer than broad (13 : 4,  $\times 100$ ), further joints gradually shortening and attenuating so that penultimate joint twice longer than broad (6.5 : 3,  $\times 100$ ).

Thorax only a fifth longer than high (in lateral view, 50 : 40,  $\times 63$ ). Lateral side of pronotum extremely faintly coriaceous, shiny, its fore margin rugulose, indistinctly crenulated. Mesonotum (in dorsal view) somewhat broader between tegulae than long, together with scutellum and postaxilla polished. Notauli restricted to declivous part of mesonotum. Pit of mesonotum deep and round. Prescutellar furrow deep, crenulated. Propodeum polished, close around lunule distinctly and along hind margin rather indistinctly rugulose. Mesopleura polished, sternaulus indistinct.

Fore tarsus longer than, middle and hind tarsi as long as respective tibiae. Hind femur four times longer than, broad. Hind basitarsus slightly shorter than tarsal joints 2—3 together.

Fore wing somewhat longer than body. Stigma wedge-shaped, five times longer than broad.  $r_1$  leaving stigma proximally,  $r_2$  twice longer than *cuqul* (38 : 18,  $\times 100$ ),  $r_3$  nearly twice as long as  $r_2$  (65 : 38,  $\times 100$ ) and only approaching tip of wing.  $r_2$  and *cu3* distinctly converging. *n. rec.* postfurcal. *B* below and distally open, issuing *n. par.* below from its middle.

Abdomen somewhat longer than thorax and distinctly broader at fourth segment. First tergite much broader at hind than before, ratio of its length to fore and hind width as 27 : 17 : 31 ( $\times 100$ , Fig. 6). Two keels of first tergite moderately converging behind, and merging into longitudinal striato-rugulosity on hind half of tergite. Surface between keels posteriorly uneven to longitudinally rugulose. Tergites 2—8 polished, each before hind margin with a row of piles. Ovipositor sheath (in lateral view) as long as third basitarsus.

Head and abdomen yellow, head above rather reddish yellow. Apex of mandible blackish. Oral organs with palpi pale yellow. Ocellar field black. Flagellum brownish black. Scape, pedicel and base of first joint of flagellum yellow; scape above and inner surface of pedicel dark. Prothorax, fore lower margin and course of notauli on mesonotum, lateral margin of scutellum, and two lateral spots of propodeum reddish yellow. Mesopleura with brownish to reddish yellow patterns indistinctly bordered. Margins and two keels of first tergite blackish, mediotransverse streak brown. Ovipositor sheath brownish black. Wings subhyaline. Stigma and venation light brown.

♂ and host unknown.

Locality: Veszprém, Kálvária, 18 June 1973, 1 ♀ (holotype), leg. J. PAPP.

Holotype deposited in the Hungarian Natural History Museum, Budapest; Hym. Typ. No. 2441.

Remark. — The holotype was labelled by M. FISCHER in 1975 as "*Opius* n. sp. ♀, cf. *compar* MARSH."

### ***Opius (Utetes) melbus* sp. n., ♀ (Figs. 8—10)**

Though the manifestation of sternaulus and its crenulation is less distinct than normally, the new species represents the subgenus *Utetes* FORST. It stands nearest to *O. (U.) hilaris* FISCHER, 1963 (England, Austria, Hungary, Poland) and distinguishable from it by the characters summarized below:

#### ***O. hilaris* Fl.\***

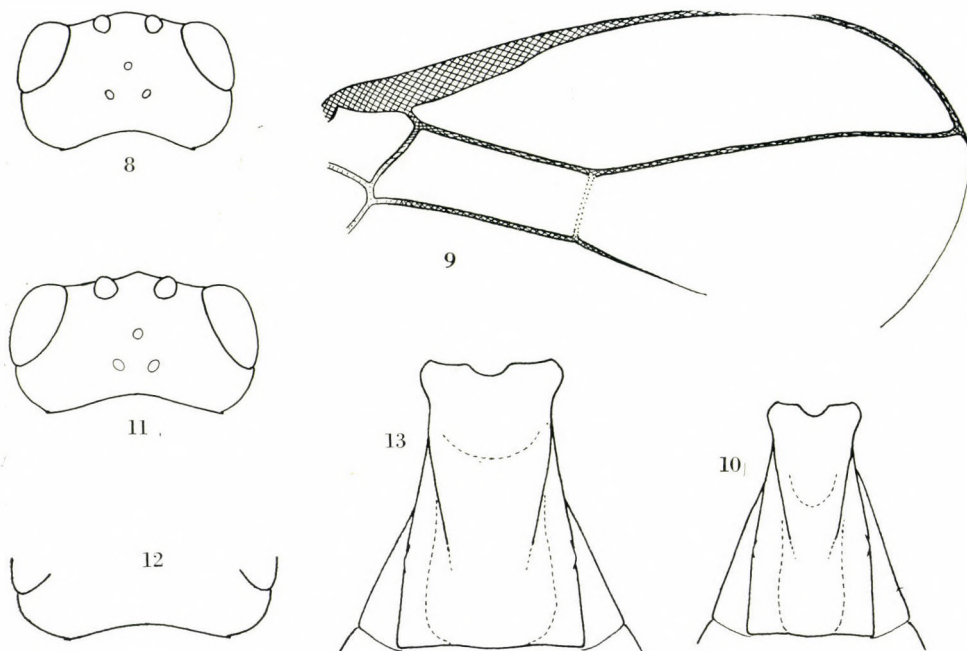
1. First tergite somewhat longer than wide at rear (18 : 16,  $\times 100$ ).
2. Ovipositor sheath (in dorsal view) concealed, (in lateral view) at most as long as hind basitarsus.
3. Distance between hind two ocelli at most slightly longer than greatest diameter of one ocellus elliptical in form.
4. Eye (in dorsal view) distinctly longer than temple; temple more rounded (Fig. 11).
5. Clypeus twice wider than high.

#### ***O. melbus* sp. n.**

1. First tergite distinctly longer than wide at rear (24 : 14,  $\times 100$ , Fig. 10).
2. Ovipositor sheath (in dorsal view) visible, (in lateral view) as long as hind tarsal joints 1—2.
3. Distance between hind two ocelli distinctly twice longer than greatest diameter of one ocellus elliptical in form.
4. Eye (in dorsal view) less distinctly longer than temple; temple less rounded (Fig. 8).
5. Clypeus 1.6 times wider than high.

\* Through DR. M. FISCHER's courtesy (Wien) I could compare the holotype of *O. hilaris* Fl. with my new species.





Figs. 8–10. *Opius (Utetes) melbus* sp. n. ♀: 8 = head in dorsal view; 9 = distal part of right fore wing, 10 = first tergite. — Fig. 11. *Opius (Utetes) hilaris* FISCHER: head in dorsal view. — Figs. 12–13. *Opius (Utetes) cingulatus* WESMAEL: 12 = head behind eyes, in dorsal view; 13 = first tergite

Considering the feebly manifested sternaulus and its crenulation the new species runs easily to *O. (Nosopoea) cingulatus* WESMAEL, 1835 (Europe), however, the two species are obviously differentiated by the following features:

#### *O. cingulatus* WESM.

1. Head (in dorsal view) transverse, twice broader than long, behind eyes temple more rounded (Fig. 12).
2. First tergite 1.4–1.5 times longer than wide at rear, its sides rather evenly and moderately converging anteriorly (Fig. 13).
3. Face a third wider than high (30–28 : 20–21,  $\times 100$ ). Clypeus thrice wider than high.
4. Cheek distinctly shorter than basal width of mandible (8–9 : 6,  $\times 100$ ).
5. Flagellum more or less attenuating; first flagellar joint two-and-a-half times, penultimate joint twice longer than broad.
6. Ovipositor sheath (in lateral view) at most as long as hind basitarsus.

#### *O. melbus* sp. n.

1. Head (in dorsal view) subcubic, slightly less than twice as broad as long (45 : 25,  $\times 100$ ), behind eyes temple less rounded (Fig. 8).
2. First tergite 1.7 times longer than wide, its sides before spiracles feebly converging, behind spiracles parallel (Fig. 10).
3. Face quadratic, slightly wider than high (24 : 21,  $\times 100$ ). Clypeus 1.6 times wider than high.
4. Cheek as long as basal width of mandible.
5. Flagellum not attenuating; first flagellar joint three-and-a-half times, penultimate joint 2.6 times longer than broad.
6. Ovipositor sheath (in lateral view) as long as hind tarsal joints 1–2.

Additional features. — ♀. Body 2.1 mm long. Head (in dorsal view) distinctly wider than thorax between tegulae (45 : 34,  $\times 100$ ). Eye 1.7 times higher than broad, as wide as temple (in lateral view). Ocelli small and forming an equilateral triangle, fore ocellus round, hind two ocelli faintly elliptical. Distance between hind two ocelli twice longer than greatest diameter of one ocellus; distance between fore and a hind ocelli a little more than twice as long as diameter of fore ocellus. POL : OOL as 6 : 11 ( $\times 100$ ). Face smooth, shiny, laterally and near to eye with fine punctures. Clypeus smooth, shiny, below with very fine punctures. Distance between tentorial pits twice longer than that between pit and eye. Mouth open. Mandible below its base not dentiform, i.e. subtooth absent. Frons, vertex, temple and cheek polished. Antenna one-and-a-half times longer than body, 27-jointed.

Thorax stout (in lateral view), one-sixth longer than high (42 : 35,  $\times 63$ ). Side of pronotum polished, its fore margin subcrenulated. Mesonotum (in dorsal view) as long as wide between tegulae, together with scutellum and postaxilla polished. Notauli restricted to declivous part of mesonotum. Pit of mesonotum round. Prescutellar furrow not so deep as usual, crenulated. Propodeum rugulose with smooth or uneven fields. Mesopleura polished, sternaulus anteriorly distinct as a shallow and short furrow with feeble crenulation, however, sternaulus not clearly defined as normal, so, implicitly, the species may be considered as a representative of the subgenus *Nosopoea* FÖRST.

Fore tarsus obviously, middle tarsus somewhat longer than, hind tarsus as long as respective tibia. Third femur slightly more than five times as long as broad.

Fore wing one-fifth longer than body. Stigma (Fig. 9) wedge-shaped, six times longer than broad, issuing *r*1 proximally. *r*1 half as long as width of stigma, *r*2 twice as long as *cu*qul (25 : 12,  $\times 63$ ) and subparallel with *cu*2, *r*3 twice as long as *r*2, indistinctly bisinuate and reaches tip of wing. *n. rec.* distinctly postfurcal. *B* closed, *n. par.* starts from it below its middle.

Abdomen somewhat longer than thorax, but shorter than head and thorax together. Proportional length to fore (before base) and hind breadth of first tergite as 24 : 11 : 14 ( $\times 100$ , Fig. 10). Two keels of first tergite moderately converging and at middle merging into longitudinal rugulosity of hind half of first tergite. Further tergites polished.

Head and thorax blackish, abdomen yellow, first tergite brown. Antenna dark brown; scape and first flagellar joint yellowish, pedicel brownish. Face brown, cheek and clypeus yellow. Mandible yellow with dark apex. Oral organ with palpi yellow. Tegulae pale yellow. Mesopleura brownish. Legs yellow. Hind half of third tergite and further tergites, except mediotransverse yellow band of tergites 4–5, tintless, i.e. here tergites seem to be membranous. Wings subhyaline. Stigma and venation yellowish brown.

♂ and host unknown.



Locality: Némethbánya, Jäger-völgy, captured in a Malaise-trap between 11—14h, 17 July 1973, 1 ♀ (holotype), leg. J. PAPP.

Holotype deposited in the Hungarian Natural History Museum, Budapest; Hym. Typ. No. 2443.

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## SPHAEROCERIDAE (DIPTERA) IN THE COLLECTION OF THE HUNGARIAN NATURAL HISTORY MUSEUM.

### IV. SPHAEROCERINAE

By

L. PAPP

(Received November 30, 1977)

Eighteen new species of the subfamily Sphaerocerinae are described from the collection of the HNHM [*Sphaerocera* 1, *Afromyia* 2, *Parasphaerocera* 10 (incl. *Taigatomyia* subgen. n., type-species *P. (T.) parvula* sp. n.)], *Trichosphaerocera* gen. n. (type-species: *T. africana* sp. n.), *Lotobia* 2, *Ischiolepta* 2]. New locality data of other 17 species of the subfamily are given. With 48 figures.

The subfamily Sphaerocerinae is easily separable from the other subfamilies of the fly family Sphaeroceridae. The most important features of the imagos of the subfamily can be summarized as follows: Complete venation of wings, i.e. costal vein reaching vein *m*, a basal cross-vein, anal cell and anal vein present; discal cell comparatively short, thus ultimate section of *cu* (extending to wing margin even if as a thin colourless vein) long, in the majority of species longer than  $t_p$ ; anal vein comparatively short and more closely placed to inner margin of wing than in the Copromyzinae; deep antennal foveae on head; cephalic and thoracic bristles largely or completely reduced, in a number of species these bristles or a part of them replaced by small to big protuberances and sharp tubercles, no scutellar bristles; bristles of legs reduced; preabdomen consisting of 5 segments but in several genera only 4 preabdominal segments present on males, all other segments modified for constituting or receiving the genital parts; male hypopygium small as a rule; 2 pairs of hypopygial processes [valvulae laterales et mediales of KIM (1968)]; female abdominal segments 6—10 telescoping, retractable into 5th segment; 2 spermathecae; female cerci small.

The subfamily is represented by 35 species in our Collection. There is almost 100 described species in this subfamily, together with the species described below (cf. RICHARDS 1965, KIM, 1968, 1972, VANSCHUYTBROECK, 1948, 1959), thus our Collection is rather significant and rich (approx. 800) in specimens.

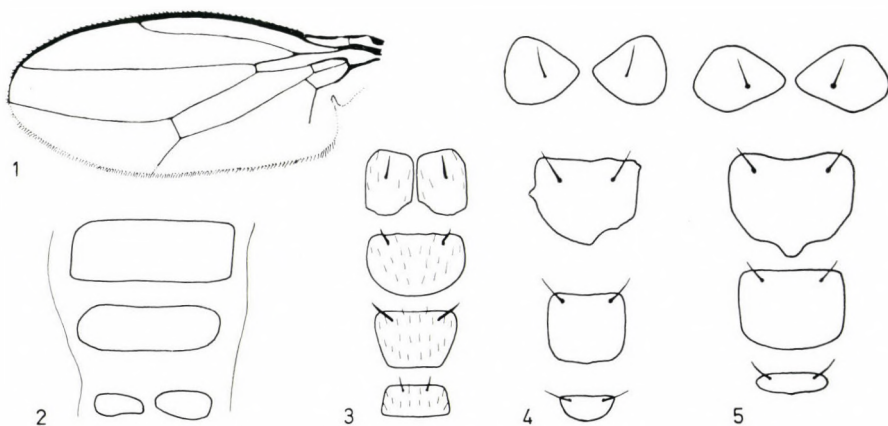
I should like to express my sincere thanks to the collectors of the following materials, for their efforts in gathering these very interesting specimens. I am greatly indebted to DR. E. P. NARTSHUK (Zoological Institute, Academy of Sciences, Leningrad), DR. J. DECELLE (Musée Royal de l'Afrique Centrale, Tervuren), P. VANSCHUYTBROECK (Institut Royal des Sciences Naturelles de Belgique, Bruxelles), who helped my work with loans of materials and type-specimens.



I propose to discuss the material of our Collection in the order presumably corresponding to the phylogenetic relations of the genera (*Sphaerocera* — *Afromyia* — *Parasphaerocera* — *Trichosphaerocera* — *Lotobia*, *Ischiolepta*); there is no representative of two genera, *Homalomitra* BORGM., and *Safaria* RICH., in our Collection.

***Sphaerocera breviradiata* sp. n.**

Body brown, legs light brown (fore tarsi dark brown). Facial plate somewhat protruding between bases of antennae; above ventralmost points of antennal foveae facial plate as high as its median width. Vibrissae not very thick and longer than third antennal joint. Exclinate orbital and inclinate interfrontal bristles present. Mesonotum with two rows each of well-ordered *ac* and *dc* tubercles. Scutellum covered by scattered but evenly placed tubercles; 1 pair of slightly mesocline and moderately big warts on hind margin of scutellum. Femora and even tibiae rather thick. Fore tibia with thin and short subapical anterodorsal bristle. Mid tibia with a stronger ventral apical bristle. Hind tibia (Fig. 13) slightly thickened towards tip with a moderately long ventral apical spur. Hind metatarsus thick, slightly flattened, its postero-ventral side with a row of 8 short and very sharp black bristles. Most striking features of wing: very short  $mg_2$  costal section, thus  $c_x$  very low, only 1.25; lowest value among its congeners (Fig. 1). Vein  $r_{4+5}$  slightly, vein *m* more strongly, upcurving, e.g. the two veins converging towards tip of wing. Length



Figs. 1–5. 1 = *Sphaerocera breviradiata* sp. n., wing; 2–3 = *Afromyia ghanensis* sp. n.: 2 = tergites 3–5 of the holotype male, 3 = sternites of a paratype female; 4–5 = *Afromyia wittei* (VANSCHUYTBROECK, 1948) female abdominal sternites; 4 = sternites of a female from Congo, Sibiti, 5 = of a female from Ghana

of wing: 2.29 mm, width: 0.95 mm. Male hypopygium rather peaked dorsally, surstylus comparatively short with rounded tip.

Body length: holotype male: 2.53 mm.

Holotype male: "Argentina, Rio Negro, El Bolsón, Pampa Azcona, 350 m, 1. 9. 1961, leg. TOPÁL (No. 38)" (sifted from under cattle carcass, 3 months old).

*Sphaerocera breviradiata* sp. n. is an easily recognizable species, since its costal section  $mg_2$  is very short (Fig. 1). In KIM's (1968) key it runs to the species *richardsi* KIM, 1968 (Peru), but the  $c_x$  value of this latter species is 4.4, and the male surstylus is much longer and pointed, contrarily to the short and rounded surstylus of the new species.

*Sphaerocera curvipes* LATREILLE, 1805 — Hungary: over 240 pinned specimens and several hundreds in alcohol (+ several hundreds larvae). — Mongolia, Finland, Balearic Islands, Afghanistan, Tunisia (PAPP, 1973a, 1973b, 1977, 1978). In our Collection, there are 11 ♂, 8 ♀ from Poland, Germany, Austria, Belgium, Yugoslavia, Bulgaria, Crete. — It is a common coprophagous species, almost cosmopolitan owing to human activity.

*Sphaerocera monilis* HALIDAY, 1836 — Hungary: 9 ex. from 5 localities (Kőszeg, Visegrád, Soltvadkert, Magyarkút, Jósvalfő). — Yugoslavia: 1 ♀: "Slavon". — Czechoslovakia (new): 1 ♂: Bártfa (= Bardejov), Čsergő h., 5. 7. 1969, leg. MIHÁLYI. — Known only from Europe, found on deer droppings, in soil traps, in *gouffres*, reared from mushrooms.

### *Afromyia flavimana* sp. n.

The smallest species of the genus, its body length smaller than 2.0 mm. Body, coxae, femora and tibiae dark brown; fore tarsi, except for base of metatarsus, whitish yellow. Also mid and hind tarsi light, yellow or light brownish yellow. Two pairs of short proclinate bristles above eyes. Strikingly long, incurving outer pair vertical bristles (as long as antennae). Genae very wide, smallest diameter as wide as longitudinal axis of eye. 2 pairs of long vibrissae. Third antennal joint reniform, upper edge with smooth arista. Mesonotum with a pair of exceptionally characteristic bristles *dc*: bacilliform, with a thicker obtuse tip than their diameter at base. Strongly thickened fore femur ventrally with long and very sharp bristles, originating from peculiar tubercles. Hind femur curved. No ventral apical spur on hind tibia, only 1 thin, moderately long bristle present. Wings light brownish with darker brown costa, other veins light brown;  $c_x$  value rather low, only 1.15—1.34. Veins  $r_{4+5}$  and *m* almost parallel. Basal section of  $r_{4+5} : t_a - t_p : t_p$ : ultimate section of  $cu = 7 : 27 : 5 : 17$ . Length of wing: holotype ♀: 1.51 mm, paratype ♀♀: 1.36—1.40 mm; width of wing: holotype ♀: 0.58 mm, paratype ♀♀: 0.49—0.56 mm. Structure of female abdomen characteristically different from that of all known species. Tergites (Fig. 6) comparatively narrow, much narrower than abdomen. Sternites (Fig. 11) peculiar, sternites 1+2, 3 and 4 small each with 1 pair of rather strong bristles, sternite 5 enormous, without bristles, medio-caudally with a



characteristic linear cut, reaching caudal  $1/4$  to  $3/8$  of length of sternite. Sternite 6 consisting of two sclerites, with 1 pair of long bristles.

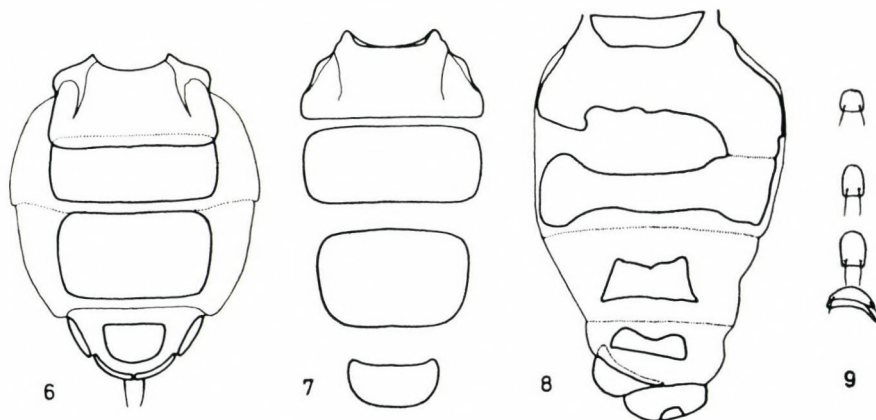
Body length: holotype ♀: 1.84 mm, paratype ♀♀: 1.82—1.91 mm.

Holotype female: "Congo, Lefinie reservation, Nambouli river, 13. 1. 1964, leg. J. BALOGH—A. ZICSI (No. 679)" (soil traps placed in elephant manure). Paratypes: 2 ♀: data as for holotype.

*Afromyia flavimana* sp. n. is an easily recognizable species: body comparatively very small, head with very long outer verticals, mesonotum presuturally with a pair of peculiar *dc* bristles. The most striking feature is the structure of the female abdomen: its enormous 5th sternite is completely different from that of all known species, for example from the bipartite 5th sternite of *ghanensis* sp. n. (Fig. 11. cf. Fig. 5).

### *Afromyia ghanensis* sp. n.

Body and legs dark brown, yet fore tarsi almost entirely light brownish yellow and also basal third of mid and hind femora light brownish yellow. Mid tibiae, mid and hind tarsi light brown. Posterior half of frons with 4 pairs of short proclinate bristles originating from tubercles, hindmost pair originating on occiput foremost one above posterior third of eyes. Antennae and vibrissae similar to those of *flavimana* sp. n. Genae as wide as length of longitudinal axis of eye. Presutural bristle *dc* very short, apex acute, thickest at base (cf. *flavimana* sp. n.). Fore femora slightly swollen, ventrally with longer bristles originating from small warts. No ventral apical spur on hind tibia, only a



Figs. 6—9. 6 = *Afromyia flavimana* sp. n., dorsal view of abdomen; 7 = *Afromyia ghanensis* sp. n. paratype female, abdominal tergites; 8—9 = *Parasphaerocera* (*Taigetomyia*) *parvula* subg. et sp. n. holotype male; 8 = dorsal view of abdomen, 9 = abdominal sternites

moderately long, very thin bristle present. Costa of wing dark brown, other veins light brown, wing light brownish, infuscated.  $c_x = 1.30-1.38$ . Basal section of  $r_{4+5} : t_a - t_p : t_p$ : ultimate section of  $cu = 10 : 34 : 9 : 16$  and  $9 : 28 : 8 : 16$ , respectively. Length of wing: holotype male: 1.51 mm, paratype ♀♀: 1.62–1.76 mm, width of wing: holotype ♂: 0.55 mm, paratype ♀♀: 0.52–0.62 mm. Abdominal tergites comparatively wide (Fig. 7), hardly narrower than abdomen. Male 5th tergite bipartite (Fig. 2), female 5th sternite not divided (Fig. 7). Female 5th sternite consisting of two sclerites (Fig. 3), every sternite (including 5th) with 1 pair of strong bristles. Male anterior hypopygial process (surstylus) rather short and wide (Fig. 10), neither posterior hypopygial processes long, curved and slightly widening at tip.

Body length: holotype male: 2.38 mm, paratype ♀♀: 2.21–2.53 mm.

Holotype male: "Ghana, Kpeze, 29. 8. 1967, sifted, fallen *Raphia* palm stem, leg. ENDRÓDY-YOUNGA (No. 265)". Paratypes: 7 ♀: data as for holotype (1 ♀ deposited in Brussels, exchange).

*Afromyia ghanensis* sp. n. differs from its congeners by the 4 pairs of proclinate bristles on the posterior half of frons, the bipartite male 5th tergite and by the shape of the female abdominal sternites (Fig. 3, cf. Figs. 4, 5, 11); also the structure of male genitalia is different from that of the known species.

*Afromyia wittei* (VANSCHUYTBROECK, 1948) — Uganda (new): 1 ♂: Mujenje, IX. 1913, KATONA (= K. KITTENBERGER). — Ghana (new): 1 ♀: Kpeze, 29. 8. 1967, sifted, fallen *Raphia* palm stem, leg. S. ENDRÓDY-YOUNGA (No. 265). — Congo: 1 ♀: Sibiti, IRHO rain forest, 25. 11. 1963, leg. S. ENDRÓDY-YOUNGA (No. 237). — Known only from the Congo (see KIM, 1968). Through the courtesy of M. P. VANSCHUYTBROECK (Brussels), I was able to study 1 male and female paratype each. Our specimens are somewhat bigger, and some other small differences also appear in the type-specimens. The marked differences found between the female sternites of the specimens from Congo and from Ghana are rather striking (Fig. 4 and 5). There are two possible inferences: 1) it is a case of a highly variable species with a large area; 2) as this species is restricted to the tropical forest (rain-forest, semideciduous forest, gallery forest), many isolated populations had evolved (the species is unable to fly in all probability), and then developed into separate distinct species. It will be necessary to study larger materials to reach a final decision.

### *Parasphaerocera* SPULER, 1924

Type-species: *bimaculata* (WILLISTON, 1896) (orig. des.)

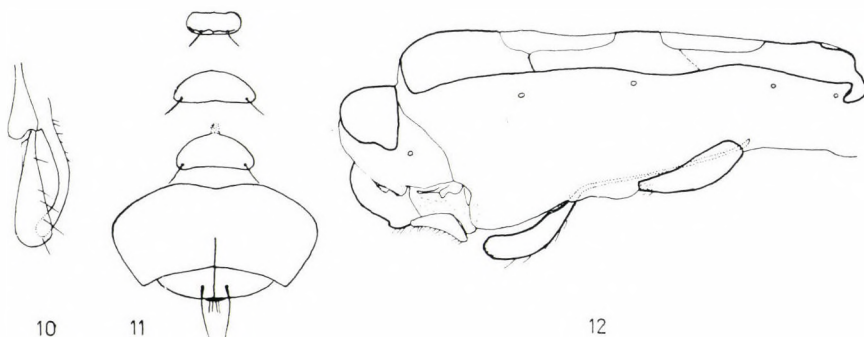
The known area of the genus is enlarged considerably by the locality data of the new species described below. The hitherto known species of the genus were found in North America (up to Maryland and Massachusetts), in Central America (primarily from Panama) and in South America [(Ecuador, Peru (Iquitos), Brasil, Venezuela, B. Guiana, West Indies)]. Two of the new species were collected in Bolivia, three were found in South Chile (Valdivia), the others described from Costa Rica. The fact that ten of twelve species in our Collection proved to be new shows that many more will probably be described in the



genus. As it is beyond question that the genus *Parasphaerocera* s. lat. is monophyletic (cf. also KIM, 1972, Fig. 365), it seems unreasonable to divide it into several genera (cf. KIM, 1968, 1972). Some of the species of the genus are rather peculiar (see male of *P. andrassyi* sp. n., or *Taigetomyia* subg. n.), the peculiarities should not be regarded more than such of a specific (or at most, subgeneric) level. The species of *Parasphaerocera* seem rather "young" also from a phylogenetic point of view (these problems will be discussed in a future paper).

### ***Parasphaerocera andrassyi* sp. n.**

Body dark brown, legs light brown. Facial plate big, comparatively very high below antennae and slightly bulging. A big flat protuberance at middle, similar to that in *zicsii* sp. n. First and second antennal joints light brown, third joint ochreous yellow. Mesonotum with 2 rows each of short *ac* and *dc* tubercles. Femora only moderately thickened, no ventroapical spur on hind tibia. Wings with a brown infuscation, costa dark brown, veins light brown.  $c_x$  value very high, 3.74–4.06, thus vein  $r_{2+3}$  parallel with costa for a long section, similarly as in *zicsii* sp. n. Basal section of  $r_{4+5} : t_a - t_p : t_p$ : ultimate section of  $cu = 14 : 28 : 6 : 19$ . Length of wing: holotype ♂: 2.35 mm, paratypes: 2.41–2.53 mm, width: holotype ♂: 0.97 mm, paratypes: 0.92–0.99 mm. Dorsal side of abdomen with large pale spots, i.e. with big unsclerotized cuticle areas (Fig. 31); anterior pale spot  $\pm$  quadrangular, posterior one tapering laterally. Male 5th tergite not divided and rather big. Male abdominal sternites of a peculiar form (Fig. 21). Sternite 1+2 very small, sternite 3 very large and asymmetrical (shape almost identical in all of our specimens), anterior part of sternite 3 reaching cranially well before hind margin of tergite 1+2



Figs. 10–12. 10 = *Afromyia ghanensis* sp. n., male hypopygial processes; 11 = *Afromyia flavimana* sp. n., female abdominal sternites; 12 = *Parasphaerocera andrassyi* sp. n., male abdomen in lateral view

(Fig. 12). Male sternite 4 with a very long, strong, lath-like process, placed under sternite 2 and reaching before anterior margin of sternite 3; caudal part of sternite 4 very thick, projecting from below other abdominal parts (Fig. 12). Male surstyli moderately long yet very wide. Female sternite 1+2 represented by 2 minute circular sclerites (Fig. 32), no 3rd sternite, sternite 4 small, phylliform and asymmetrical, also sternite 5 small, trapezoidal.

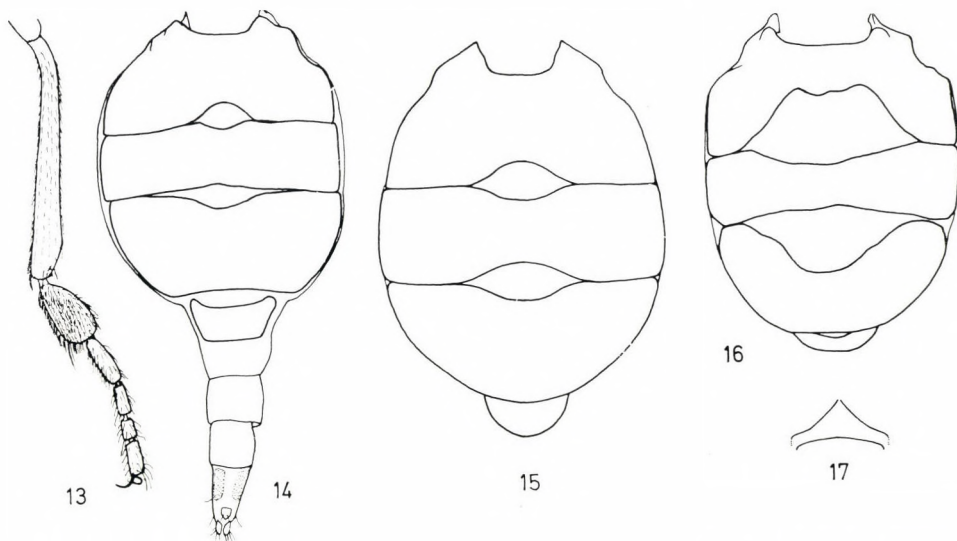
Body length: holotype ♂: 2.91 mm, paratypes: 2.94–3.09 mm.

Holotype male: "Chile, Environs of La Unión (Provincia Valdivia), along road leading to Valdivia, 26. 10. 1965, Hung. soil zool. exp. S. Am., No. 65, leg. BALOGH et al."

Paratypes: 3 ♂, 1 ♀: data as for holotype.

This species is named in honour of ISTVÁN ANDRÁSSY, D. Sc. (Zoosystematical and Ecological Institute, Eötvös Loránd University, Budapest), a member of the team which collected the type-material.

Because of their peculiar features, *P. andrassyi* sp. n., together with *P. zicsii* sp. n., cannot be fitted into RICHARDS' key (1965) (cf. RICHARDS, 1965, couplet 5: their femora neither pale yellow nor black on basal half, etc.). The  $c_x$  value of the wing is very high, the structure of the male abdomen of *andrassyi* sp. n. is completely different from that of the other known species (because of the similarity of the females of the two species, it is probable that also the males will prove to be similar). As I had no males of *zicsii* sp. n., the differentiating diagnosis is given only for females. The female abdominal sternite 1+2



Figs. 13–17. 13 = *Sphaerocera breviradiata* sp. n., hind leg, inner view; 14 = *Parasphaerocera subguttula* sp. n. paratype female, abdomen in dorsal view; 15 = *P. paratraversa* sp. n. holotype female, abdomen in dorsal view; 16 = *P. subdissecta* sp. n. holotype female, abdomen in dorsal view; 17 = *P. paraflavicoxa* sp. n., facial plate



of *andrassyi* sp. n. consists of two minute sclerites, contrarily to the single small central sclerite of *zicsii* sp. n. The 4th and 5th sternites of *andrassyi* sp. n. are much smaller than those of *zicsii* (Fig. 32, cf. Fig. 34); there is no central emargination on the cranial margin of sternite 5.

### ***Parasphaerocera baloghi* sp. n.**

Body dark brown, legs light brown. Facial plate very big, below antennae very high and slightly convex around lower margin of antennal foveae, with a big flat convex rounded boss medially, projecting hardly before antennae in profile. Mesonotum with 2 rows each of small tubercles *ac* and *dc*. Wings distinctly brown, veins dark brown, value  $c_x$  very high, 5.24. Vein *cu* reaching wing margin, though only as a colourless vein. Basal section of  $r_{4+5} : t_a - t_p : t_p$ : ultimate section of  $cu = 20 : 45 - 10 : 37$ . Length of wing: holotype ♂: 2.65 mm, paratype ♀: 2.68 mm, width of wing: holotype ♂: 1.11 mm, paratype ♀: 1.14 mm. Femora rather thickened, no ventral apical spur on female hind tibia, only very small spur on male hind tibia. Male mid tibia ventrally with comparatively long erect bristles. Dorsal side of abdomen with very big pale spots (Fig. 28). Male sternite 5 as long as sternite 4, craniomedially with a deep but narrow cut. Male sternite 1+2 transverse, male sternite 3 inversely trapezoidal, yet cranial edge widely convex (Fig. 18), sternite 4 in a peculiar form, caudo-lateral edges with two pairs of comparatively long bristles, sternite 5 very large. Male surstyli long and very thin. Female sternite 1+2 (Fig. 19) rounded, sternite 3 small and very narrow, sternite 4 rather big, longitudinal, sternite 5 trapezoidal, its anterior part very wide.

Body length: holotype ♂: 3.45 mm, paratype ♀: 3.23 mm.

Holotype male: "Chile, Environs of La Unión (Provincia Valdivia), along road leading to Valdivia, 26. 10. 1965, Hung. soil zool. exp. S. Am., No. 65, leg. BALOGH et al."

Paratype ♀: data as for holotype.

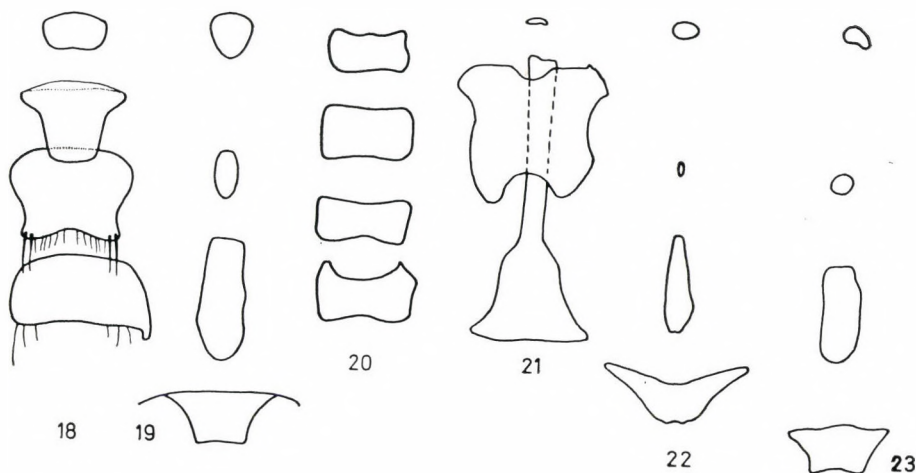
It is a privilege to dedicate the new species to Prof. DR. JÁNOS BALOGH (Zoosystematical and Ecological Institute, Eötvös Loránd University, Budapest), the head of the Hungarian expeditions to the tropics.

There is no close relative of *P. baloghi* sp. n. among the known species. Value  $c_x$  of the wing is strikingly high, the shape of male sternite 4 is peculiar. It is possible that the new species is related to *tertia* (RICHARDS, 1965), but sternites 1+2 of *tertia* consist of three sclerites, contrarily to the undivided sternites 1+2 of the new species; the shape of sternite 4 of *baloghi* sp. n. is completely different and its sternite 5 is much longer than that of *tertia* (RICHARDS, 1965) (Fig. 18, cf. fig. 11 by RICHARDS).

***Parasphaerocera chimborazo* (RICHARDS, 1965)** — Costa Rica: 1 ♀: Suiza de Turrialba, 7. 5. 1921. — Described and known only from Ecuador and Costa Rica. The sternites of our specimen agree well with the drawing of RICHARDS (1965, fig. 14).

***Parasphaerocera (Mesosphaerocera) costaricensis* sp. n.**

Body dark brown, legs yellow. Head hardly shorter than its height. Facial plate  $\pm$  pentagonal only 0.03 mm wide between antennae, below antennal foveae slightly convex, bulging medially (seen also in profile). Antennae ochreous yellow to light brown. Wings brownish, veins light brown;  $c_x$  of costa = 3.0,  $t_a-t_p$ : basal section of  $r_{4+5}$  = 1.79. Wing measurements: holo-



Figs. 18–23. 18–19 = *Parasphaerocera baloghi* sp. n., abdominal sternites; 18 = holotype male, 19 = paratype female; 20 = *P. facialis* sp. n., male sternites; 21 = *P. andrassyi* sp. n., sternites 1+2–4 of paratype male; 22 = *P. musiphila* (RICHARDS, 1965), female abdominal sternites; 23 = *P. subdissecta* sp. n. holotype female, sternites

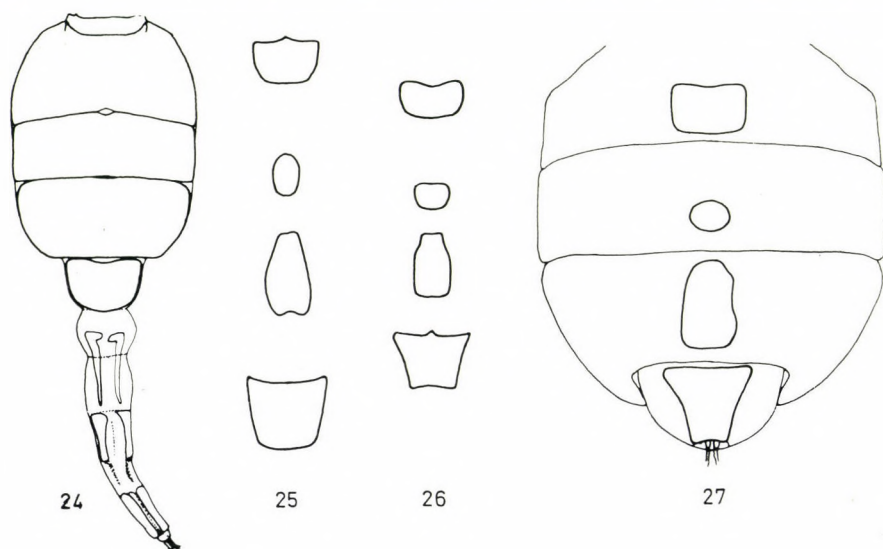
type ♂: 2.12 × 0.83 mm, paratype ♂: 1.93 × 0.77 mm, paratype ♀: 2.27 × 0.87 mm. Femora strongly thickened, mainly on males. No ventral apical spur on hind tibia. Male tergites 1+2–5 complete, bearing no pale spots, female abdomen with a 0.11 mm wide and very narrow slit between tergites 1+2 and tergite 3 (width of abdomen there: 0.92 mm). Male sternite 1+2 comparatively big, transversely quadrangular, sternite 3 at least 0.15 mm wide, longately quadrangular (0.3 mm long), sternite 4 similar to sternite 2 but wider (not precisely measurable on holotype, approx. 0.20 mm wide). Female sternites (Fig. 25) completely different from those of all related species (*guttula* RICH., *pallipes* MALL.). Sternite 1+2 wider than long, sternite 3 rather long, elongately oval, sternite 4 asymmetrical, sternite 5 very big, trapezoidal. Female cerci short and thin, with 3 minute hairs each.

Body length: holotype ♂: 2.53 mm, paratype ♀: 2.79 mm.

Holotype male: "Costa Rica 1921 — Suiza de Turrialba, 15. 5". — Paratypes: 1 ♀: ibid., 17. 5.; 1 ♂ (abdomen missing): Costa Rica, Suiza de Turrialba, 3. 5. 1921.



*P. costaricensis* sp. n. keys out to couplet 4 of RICHARDS' (1965) key [male abdomen without pale spots dorsally, female abdomen with only a very small slit on dorsal side; legs completely yellow, facial plate considerably big; see *guttula* (RICHARDS, 1965) and *pallipes* (MALLOCH, 1913)]. Considering that only the females of the two related species are known, only the female sex of the new species are separated below from its congeners. Contrarily to *guttula* RICH., which has a quadrangular 4th female sternite, the female 4th sternite



Figs. 24—27. 24—25 = *Parasphaerocera costaricensis* sp. n., paratype female; 24 = abdomen in dorsal view, 25 = sternites; 26 = *P. subguttula* sp. n., abdominal sternites; 27 = *P. paratransversa* sp. n. holotype female, abdomen in ventral view

of *costaricensis* sp. n. is elongate, narrow, asymmetrical (somewhat pyriform). The female sternites 1+2 of *pallipes* is small and pyriform, contrasting with the big and more or less pentagonal sternites 1+2 of *costaricensis* sp. n. The females of *pallipes* have a narrow sublinear sternite 3, contrarily to the elongately oval sternite 3 of the new species.

### ***Parasphaerocera facialis* sp. n.**

Body dark brown, hardly shining, legs light brown, basal part of femora with a dark brown hue. Facial plate very big, bulging far before eyes in profile, also very high below antennal foveae, height there 0.15 mm. Antennae yellow. Longitudinal axis of eye: smallest diameter of gena = 1.19—1.29. Wings brownish, veins brown. Anterior cross-vein very thick and very short, also

hind cross-vein short.  $c_x = 1.82$ . Pigmented part of ultimate section of vein *cu* ending far before wing margin. Basal section of  $r_{4+5} : t_a - t_p$ ; ultimate section of *cu* = 42 : 54 : 33. Length of wing: holotype ♂: 2.41 mm, paratype ♂♂: 2.35–2.38 mm, width of wing: holotype ♂: 0.99 mm, paratype ♂♂: 0.94–0.95 mm. Ventral apical spur on hind tibia very short, merely 0.06 mm, and thin. Dorsal side of male abdomen with very wide pale spots, but these very short even medially (Fig. 29); tergite 5 consisting of 2 parts. Sternites (Fig. 20) almost quadrangular, sternite 1+2 and sternite 5 asymmetrical, latter one with a central emargination cranially. Surstylus very short.

Body length: holotype ♂: 2.38 mm, paratype ♂♂: 2.56–3.09 mm.

Holotype male: "Costa Rica, Suiza de Turrialba, 8. 5. 1921". — Paratypes: 1 ♂: *ibid.*, 22. 5. 1921; 1 ♂: Costa Rica 1921, Suiza de Turrialba, 7. 4.

*P. facialis* sp. n. has a conspicuously big facial plate; the most characteristic features are in the shape of the abdominal tergites and sternites. There are very wide but very short pale spots on the dorsal side of the male abdomen. The new species keys out to couplet 12 (*transversalis* RICH.) in RICHARDS' key, but the species *transversalis* has a very small sternite 1+2, while sternite 1+2 of the new species is hardly smaller than sternite 3; sternite 3 of *transversalis* is longer than broad, contrarily to the transverse sternite 3 of the new species.

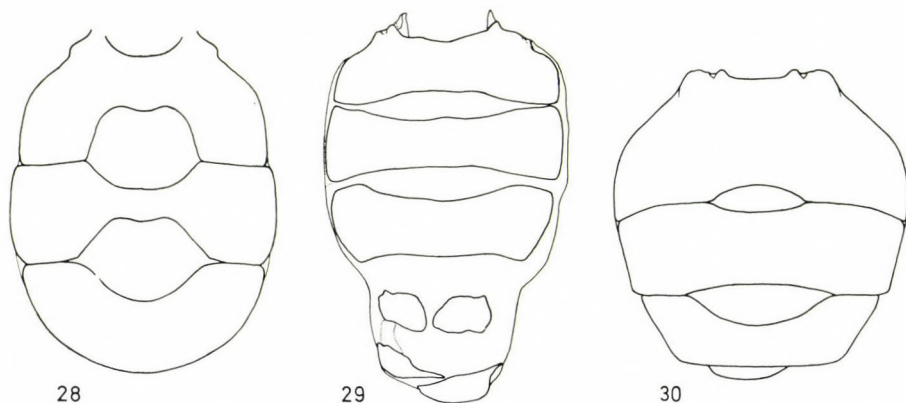
***Parasphaerocera musiphila*** (RICHARDS, 1965): female new — Costa Rica: 1 ♂, 1 ♀: Suiza de Turrialba — "*Sphaerocera fenestrata* ♂/♀" det. DR. O. DUDA. 5 ♂, 2 ♀: Suiza de Turrialba, 8. and 23. 4., 3., 9. and 11. 5., 2. 6. 1921. — Described from Panama, new to Costa Rica. There are 4 other *Parasphaerocera* specimens in the collection of the Zoologisches Museum, Berlin, which DUDA labelled as "*Sphaerocera fenestrata* DUDA", 1 female specimen of one other species is labelled as "*S. flavipes* DUDA" in the Berlin collection, but DUDA never described the above specimens as new. RICHARDS described the species *musiphila* on the base of a single male, the species *amphora* RICH. was based on a single female. The abdomen of one of our female specimens was prepared on a slide. It was found that it has a small, short, transverse, oval sternite 1+2, sternite 3 minute, elongately oval, its sternite 4 rather big, long, sternite 5 very broad (Fig. 22). As a whole, it is rather similar to the drawing which RICHARDS made of the holotype of *amphora* (fig. 19 of RICHARDS), thus it is not improbable the these two nominate species are conspecific (cf. also KIM, 1972: fig. 65).

### ***Parasphaerocera* (Neosphaerocera) paraflavicoxa** sp. n.

Body dark brown, legs and antennae light brown. Facial plate very small (Fig. 17), very narrow between antennae (merely 0.02 mm). Facial plate below antennae hardly more than 0.02 mm. Clypeus short, 0.09 mm. Only a minute ventro-apical spur on hind tibia. Wings brownish infuscated, veins brown.  $c_x = 3.05$ . Basal section of  $r_{4+5} : t_a - t_p$ ; ultimate section of *cu* = 20 : 33 : 32. Terminal part of vein *cu* very thin, but pigmented and ending in wing margin. Length of wing: holotype ♂: 2.03 mm, width: 0.83 mm. Dorsal side of male



abdomen with a very small anterior pale spot: width only about 1/3 of width of abdomen (Fig. 30), posterior pale spot bigger, but tergite 3 hardly concave caudally. Tergite 5 undivided. Sternite 1+2 almost square, sternites 3 and 4 elongately quadrangular, but sternite 5 transverse. Halteres, contrarily to the majority of species in the genus, not white or yellowish white, but soiled yellow.



Figs. 28—30. *Parasphaerocera* new species, abdomen in dorsal view. 28 = *P. baloghi* sp. n., paratype female; 29 = *P. facialis* sp. n., paratype male; 30 = *P. paraflavicoxa* sp. n., holotype male

Body length: holotype ♂: 1.82 mm.

Holotype male: "Costa Rica, Suiza de Turrialba, 5. 5. 1921".

*P. paraflavicoxa* sp. n. is closely related to *flavicoxa* (MALLOCH, 1925), although the posterior pale spot on the dorsal side of abdomen of the new species is wider than half of the abdominal width. The close relation is in the shape of the facial plate of the two species. At the same time, the new species differs from *flavicoxa* in the shape of the sternites. Sternite 1+2 of *flavicoxa* distinctly transverse, contrarily to the almost square, undivided sternite 1+2 of the new species; sternites 3 and 4 of *flavicoxa* are transverse and different in shape from the longitudinal quadrangular sternites of *paraflavicoxa* sp. n.

### ***Parasphaerocera paratransversa* sp. n.**

Body dark brown, almost black, third antennal joint and legs sulphur-yellow, two basal antennal joints brownish yellow. Smallest genal width 9/11 longitudinal axis of eye. Facial plate big, bulging below antennae, medially with a flat boss, projecting only a little before eyes in profile. Facial plate high below antennal foveae, height there more than half of the height in middle.

No ventroapical spur on hind tibia. Wings yellowish, veins ochreous yellow. Ultimate section of vein *cu* reaching wing margin, though terminal part pale.  $c_x = 3.05$ . Basal section of  $r_{4+5} : t_a - t_p : t_p$ ; ultimate section of *cu* = 19 : 35 : 9 : 29. Length of wing: holotype ♀: 2.29 mm, width: 0.87 mm. Dorsal side of female abdomen (Fig. 15) with small pale spots only. Pale spots less than half as broad as abdomen. Tergite 5 undivided. Sternite 1+2 (Fig. 27) comparatively very big, sternite 3 round, sternite 4 big, asymmetrically quadrangular, sternite 5 asymmetrical, inversely trapezoidal.

Length of body: holotype ♀: 2.65 mm.

Holotype female: "Bolivia, Guayaramerin (Beni), outskirts of town, around brickyard, 5. 12. 1966, Hung. soil zool. exp. S. Am. No. 442, leg. BALOGH et al."

*Parasphaerocera paratransversa* sp. n. is closely related to *transversa* (RICHARDS, 1965) (Panama), but differing from it by the tapering lateral borders of the anterior pale spot on the dorsal side of the abdomen, contrarily to the straight borders of *transversa*. Its sternite 1+2 is similar, but sternite 4 is only 1.6 times longer than broad, in contrast to *transversa* with sternite 4 twice longer than broad; sternite 5 *paratransversa* longer than broad.

### *Parasphaerocera subdissecta* sp. n.

Body dark brown, legs ochreous yellow. Head shorter than high, frons strongly inclined towards antennae in profile. Facial plate 0.03 mm between antennae, smallest height below antennal foveae as small as 0.046 mm, clypeus high, 0.10 mm. Two basal joints of antennae yellow, third joint light brown. Longitudinal axis of eye twice longer than smallest genal width. Wings brownish, veins brown.  $c_x = 2.95$ . Anterior cross-vein very thick and 0.01 mm in length. Also hind cross-vein short. Basal section of  $r_{4+5} : t_a - t_p$ ; ultimate section of *cu* = 19 : 31 : 31. Length of wing: holotype ♀: 1.95 mm, width: 0.76 mm. Legs ochreous yellow, but basal part of femora darker, brown. Femora moderately thickened, hind femur slightly curved, without ventro-apical spur. Dorsal side of abdomen (Fig. 16) with 2 big unsclerotized pale spots. Tergite 5 undivided. Sternites 1+2 and 3 very small (Fig. 23), sternite 1+2 strongly asymmetrical, sternite 4 considerably big, longitudinal, slightly asymmetrical, sternite 5 comparatively big, asymmetrical, subtrapezoidal.

Length of body: holotype ♀: 2.30 mm.

Holotype female: "Costa Rica, Suiza de Turrialba, 9. 4. 1921".

The closest relative of *P. subdissecta* sp. n. is *P. dissecta* (RICHARDS, 1965) [*? = lepida* (RICHARDS, 1965)] (Panama), but its legs are not whitish



yellow, but yellow with some brown hue, the facial plate is different in shape. The female sternite 1+2 of *dissecta* is diamond-shaped, contrarily to the asymmetrical, oblique sternite 1+2 of the new species; the caudal edge of sternites 3 and 4 is not straight as in *dissecta*; sternite 5 of *dissecta* is rounded, crescentic, contrasting with the asymmetrical trapezoidal sternite 5 of the new species; its tergite 5 is undivided (not two small oval plates as in *dissecta*).

In the abdomen of the holotype female, 17 rather large eggs were found together with unripened eggs. Their measurements:  $0.563-0.70 \text{ mm} \times 0.135-0.140 \text{ mm}$ ; they are very big indeed, considering that the female abdomen is only 1.15 mm long. The comparison of the above data will serve as a basis for a hypothesis outlined below on the modification of abdomen of the majority of *Parasphaerocera* species. The tergites of the species of *Parasphaerocera* are strongly chitinized which — in the case of a complete chitination of the dorsal side of the abdomen — will not allow for the abdomen of the females to become barrel-shaped (i.e. the biggest possible volume) during the ripening of the eggs. But if the tergites are shorter medially than laterally, they are more flexible (considering first of all tergite 3); in this case the abdomen can dilate more. In my opinion, this is the cause of the "breaking" of tergite 5, too. As the shape of the tergites is almost independent of sex, there is no adaptive advantage of the abdomen with "holes" for the males, yet at the same time its disadvantage is not too great, because, although the cuticle is not chitinized on the pale spots, the skin is very thick there.

### ***Parasphaerocera* (*Mesosphaerocera*) *subguttula* sp. n.**

Body dark brown, legs yellow, only apex of femora and basal part of tibiae with some diffuse brown hue. Facial plate big, concave, projecting only little before eyes in profile. Facial plate comparatively wide between antennae (0.04 mm), antennal foveae with proclinate ventral margin. Facial plate about 0.12 mm high below antennae. Femora considerably thickened. No ventral apical spur on hind tibia. Wings light brownish, veins light brown.  $c_x = 3.30$ . Basal section of  $r_{4+5} : t_a - t_p$ : ultimate section of  $cu = 17 : 38 : 36$ . Length of wing: holotype ♂: 2.21 mm, paratype ♀♀: 1.97–2.35 mm, width of wing: holotype ♂: not precisely measurable owing to wrinkled wing, about 0.86 mm, paratype ♀♀: 0.75–0.94 mm. Dorsal side of abdomen with very small pale spots (Fig. 14). All male sternites quadrangular (longer than wide): sternite 1+2:  $0.21 \times 0.15 \text{ mm}$ , sternite 3:  $0.195 \times 0.18 \text{ mm}$ , sternite 4:  $0.195 \times 0.17 \text{ mm}$  (cf. Fig. 291 of KIM, 1972). Female sternite 1+2 (Fig. 26) symmetrical, transverse, anterior margin concave, sternite 3 small, sternite 4 elongate and narrow, sternite 5 slightly asymmetrical, trapezoidal.

Length of body: holotype ♂: 2.41 mm, paratype ♀♀: 2.29–2.36 mm.

Holotype male: "Costa Rica, Suiza de Turrialba, 6. 4. 1921". — Paratypes: 1 ♀: ibid., 14. 4. 1921.; 1 ♀: ibid., 5. 5. 1921.

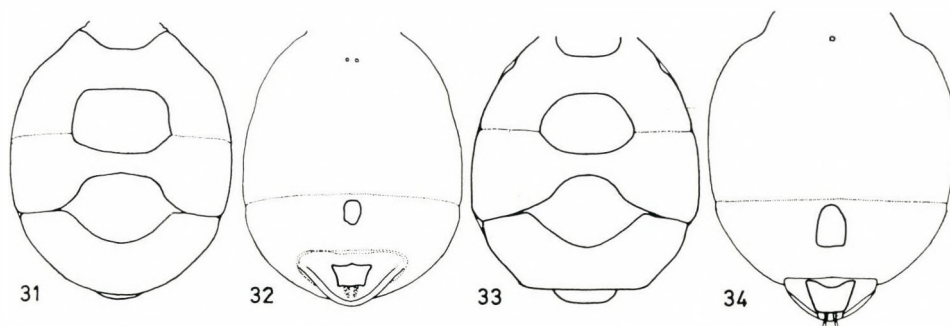
The closest relative of *P. subguttula* sp. n. is *guttula* (RICHARDS, 1965), which was described on the basis of a single female. All male sternite of the new species are longer than wide, the pale spots are bigger than those of *guttula*, the female sternite 4 of species *guttula* is comparatively wide and pentagonal, while sternite 4 of *subguttula* sp. n. is narrow and elongate (Fig. 26, cf. Fig. 28 of RICHARDS).

### *Parasphaerocera zicsii* sp. n.

Body black, legs mainly ochreous yellow, a brown coloration on femora (somewhat proximally to the middle and in apical fourth). Facial plate big, 0.05 mm wide between antennae, 0.12 mm high below antennal foveae, slightly bulging below antennae, flat boss at middle, projecting before antennae in profile. Mesonotum with 2 rows each of *ac* and *dc* tubercles. No ventro-apical spur on hind tibia.  $c_x = 3.36$ . Basal section of  $r_{4+5} : t_a - t_p$ ; ultimate section of  $cu = 14 : 20 : 19$ . Length of wing: holotype ♀: 2.65 mm, paratype ♀: 2.41 mm, width of wing: holotype ♀: 1.09 mm, paratype ♀: 0.99 mm. Dorsal side of female abdomen (Fig. 33) with 2 big pale spots; anterior pale spot round, posterior pale spot tapering laterally. Tergite 5 undivided. Sternite 1+2 represented by a single minute central sclerite (Fig. 34), sternite 3 absent, sternite 4 slightly asymmetrical with rounded cranial margin, sternite 5 with a strong anterior emargination medially.

Body length: holotype ♀: 3.29 mm, paratype ♀: 2.94 mm.

Holotype female: "Bolivia, Coroica (La Paz), 15 km S of town, 1800 m, 20. 12. 1966, ethylen-glycol soil traps, Hung. soil zool. exp. S. Am. No. 505, leg. BALOGH et al.". — Paratype ♀: data as for holotype.



Figs. 31—34. *Parasphaerocera* new species, female paratypes, abdomen. 31—32 = *P. andrassyi* sp. n.: 31 = dorsal, 32 = ventral view; 33—34 = *P. zicsii* sp. n.: 33 = dorsal, 34 = ventral view



It is a privilege to dedicate the new species to ANDRÁS ZICSI, D. Sc. (Zoosystematical and Ecological Institute, Eötvös Loránd University, Budapest), a member of the team which collected the best part of the material discussed in the present paper.

*Parasphaerocera zicsii* sp. n. is closely related to *P. andrassyi* sp. n., but sternite 1+2 of the latter species consists of two small sclerites, contrarily to the single central sclerite of *zicsii* sp. n. Sternite 4 of *zicsii* is bigger, sternite 5 not only bigger, but otherwise shaped than that of *andrassyi* sp. n. (Fig. 34, cf. Fig. 32). There are smaller yet distinct differences also in the shape of the pale spots on the dorsal side of the abdomen (Fig. 33, cf. Fig. 31).

### **Taigetomyia** subgen. n.

Facial plate very small, triangular, very low below antennae. Not only hind tibia, but also mid tibia with a ventro-apical spur (although latter one weaker than former one). One short thorn each at lateral fourth of hind scutellar margin. Dorsal side of abdomen with only one (anterior) pale spot (Fig. 8), all tergites strongly asymmetrical, tergites 4 and 5 very small. Abdominal sternites minute (Fig. 9), width of sternites 1+2, 3, 4 only 1/8 of width of abdomen, weakly chitinized, with 1 pair of bristles each near posterior margin; these bristles more than half as long as length of sternites.

Type-species: *Taigetomyia parvula* sp. n.

### **Parasphaerocera (Taigetomyia) parvula** sp. n.

Body dark brown, hardly shining, legs ochreous yellow. Head and frons very wide (head slightly wider than mesonotum). Facial plate triangular, only 0.02 mm high below antennae. Facial plate not projecting before eyes in profile. Vibrissa longer than third antennal joint. Ventro-apical spurs on mid and hind tibiae equal in length, 0.03 mm long. Ventral subapical bristle of  $mt_3$  about 0.05 mm long. Wings light brown, costa dark brown, other veins light brown.  $c_x = 3.1$ . Basal section of  $r_{4+5} : t_a - t_p : t_p$ ; ultimate section of  $cu = 10 : 24 : 6 : 20$ . Anal cell wide, apically more than 0.06 mm. Length of wing: 2.00 mm, width: 0.885 mm. Sternites 1+2, 3 and 4 light brown, very weakly chitinized and minute (Fig. 9). Male tergites 1+2 and 3 strongly asymmetrical, left side of anterior pale spot open (Fig. 8). Both length and width of tergites 4 and 5 less than half of segments. Surstylus long, narrow, similar to that of the species of *Ischiolepta*.

Length of body: holotype ♂: 2.53 mm.

Holotype male: "Chile, environs of La Unión (Provincia Valdivia), along road leading to Valdivia, 26. 10. 1965, Hung. soil zool. exp. S. Am. No. 65, leg. BALOGH et al."

**Trichosphaerocera** gen. n.

Body covered with long thin hairs, only margin of scutellum with 3 pairs of minute tubercles. Head somewhat higher than long. Antennal foveae deep and facial plate very low below them. A single pair of long vibrissae. Frontal triangle shining, reaching lunula covered with reclinate hairs. Among head bristles, 1 pair each very laterally placed, slightly reclinate and inclinate outer verticals, inclinate inner verticals and outer occipitals, and 2 pairs of proclinate and exclinate upper orbitals well discernible. No ocellar and postvertical

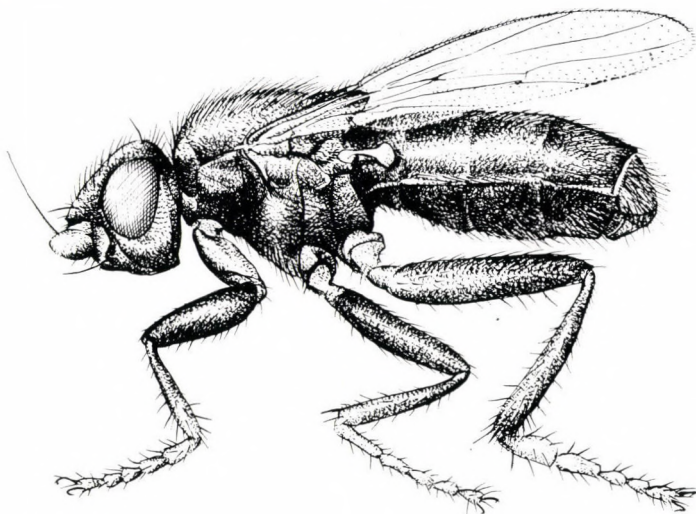


Fig. 35. *Trichosphaerocera africana* gen. et sp. n., paratype male

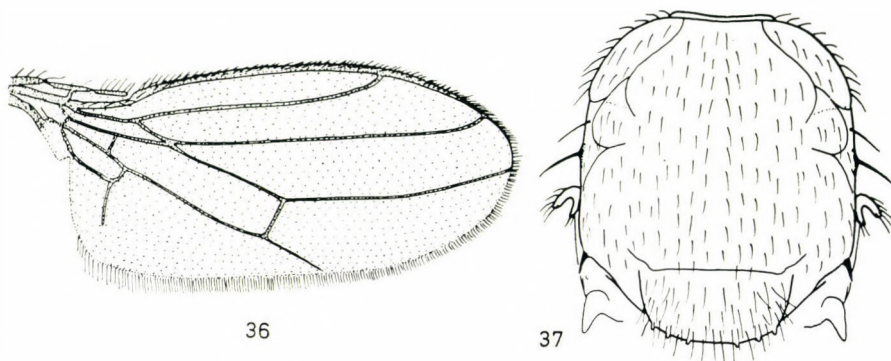
bristles, i.e. hairs in their proper places not longer than other hairs. Anterior margin of frons with 1 pair of postlunular bristles. Second antennal joints with a pair of conspicuous long bristles (Fig. 35). Arista bare. Mesonotum and scutellum covered with dense long thin hairs (Fig. 37). 2 pairs of notopleural bristles (posterior one originating from a small, conical protuberance), all other characteristic bristles of mesonotum absent. Postalar bristle transformed into a black thorn. Thoracic pleurae covered with hairs similar to those of mesonotum, but shorter. Legs hairy. Several conspicuous erect hair-like bristles, or thin bristles, on dorsal side of fore tibia and tarsus, on ventral side of fore femur, on hind femur ventrally, on hind tibia dorsally and ventrally; these bristles may be regarded as the characteristic ones. Mid tibia with a small ventral apical bristle. Hind tibia with a very small ventral apical spur. Wings (Fig. 36) very conspicuous. Its unique characteristic is the row of bristles originating on the upper side along entire length of vein  $r_1$ . Anterior cross-vein very short, i.e. practically no anterior cross-vein present, as veins  $m$  and  $r_{4+5}$  meeting there. Abdomen strongly chitinized, to the extent as in some genera



of the subfamily Limosiniinae (e.g. *Aptilotus* MIK). Tergites and sternites of the 4 preabdominal segments hairy and so broad that tergites and sternites touching laterally (Fig. 35). Segment 5 belonging to postabdomen and together with all other postabdominal segments retractible into segment 4.

Type-species: *Trichosphaerocera africana* sp. n.

*Trichosphaerocera* gen. n. is a very interesting new genus, and not only from taxonomic and morphologic points of view. The comparative analysis of



Figs. 36—37. *Trichosphaerocera africana* gen. et sp. n. 36 = wing; 37 = mesonotum, dorsal view

the features of this new genus may give a remarkable contribution to the knowledge of the phylogenetic relations in this family, which lacks paleontological data. Although most of the features of the new genus is similar to those of the other genera of the subfamily Sphaerocerinae, the body with its dense hairs and absent tubercles and the head bristles are characteristics also of the subfamily Copromyzinae. The armature of legs shows a much more primitive state than any of the other genera of the subfamily. The structure of its abdomen (tergites and sternites touching laterally, strong chitinization), which is common in the subfamily Limosiniinae in this form, and the modification of the 5th abdominal segment (belonging to postabdomen) are doubtless apomorphic features in the species under discussion. However, the shape of the abdominal sternites of the new genus is probably closer to the hypothetical primitive form than the strongly reduced sternites of the other genera of the subfamily Sphaerocerinae.

### ***Trichosphaerocera africana* sp. n.**

Body and legs dark brown, somewhat shining, only tarsi lighter brown. Eyes small, smallest genal width as big as width of eye. Frons and facial plate projecting rather far before eyes in profile (Fig. 35). Clypeus comparatively

short, palpi with several cranio-dorsally directed hairs. Claws strong, every tarsal joint with some long bristle-like hairs. Hind metatarsus somewhat flattened. Hind tibia with 4 perpendicular hairs, each dorsally and ventrally. Anteroventral side of hind femur with a row of ventrally directed long yet and thin bristles. Fore femur with a row of similar but shorter bristles. Wings (Fig. 36) brown, darker than veins. Length of wing: holotype ♂: 1.64 mm, paratype ♂♂: 1.56—1.73 mm, width of wing: holotype ♂: 0.66 mm, paratype ♂♂: 0.63—0.71 mm. Costa with dense bristle-like hairs, upper side of vein  $r_1$  with 6—7 rather long bristles (Fig. 36).  $c_x = 2.125$ —2.25. Basal section of  $r_{4+5} : t_a - t_p : t_p$ : ultimate section of  $cu = 11 : 35 : 12 : 19$ ,  $12 : 30 : 10 : 16$ , respectively. Hind margin of wings with a very long fringe. Entire genitalia hidden under tergite 4. Hypopygium very small, male surstyli wide at base, slightly curved.

Length of body: holotype ♂: 2.06 mm, paratype ♂♂: 1.95—2.15 mm.

Holotype male: "Congo, Lefinie reservation, Nambouli river, 13. 1. 1964, soil traps in elephant manure, leg. J. BALOGH, A. ZICSI (No. 679)". Paratypes: 3 ♂, data as for holotype.

### ***Lotobia endrodyi* sp. n.**

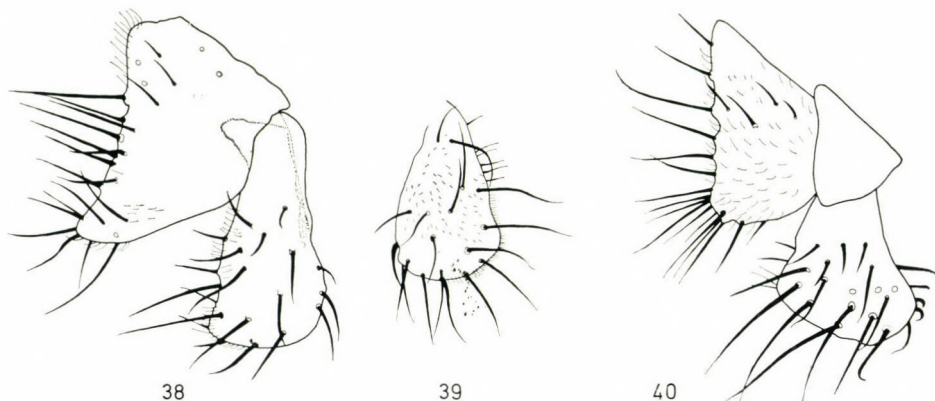
Type-series consisting of freshly emerged, immature specimens, no trustworthy information on colour of body, probably dark brown. Wings colourless, legs at least dark brown, or possibly black. Humeri and fore coxae dark brown. Frons with orbital, inner orbital and interfrontal rows of small tubercles. Facial plate big and flat, slightly bulging below antennae and somewhat medially to antennae, raised into a small boss between antennae, but facial plate convex (!) medially. Vibrissae very thick, colourless and only as long as third antennal joint. Mesonotum with well-ordered rows of *dc* tubercles; *ac* rows of tubercles ordered into 2 rows on anterior part of mesonotum, posterior 3/5 of mesonotum with irregularly placed *ac* warts, and wide stripes free of them. Scutellar margin with 14—16 thick teeth. Fore tibia anteroventrally with a strong subapical spine. Femora moderately thickened, male fore and hind tibiae very thick. Hind femora conspicuously curved. Hind tibia with a strong ventral apical spur and with a short spiniform bristle more anteriorly. Wings with veins  $r_{4+5}$  and *m* almost parallel, both upcurving in a gentle arc along their whole length.  $c_x = 1.48$ —1.90 (!). Basal section of  $r_{4+5} : t_a - t_p : t_p$ : ultimate section of  $cu = 18 : 25 : 9 : 14$ . Length of wing: holotype ♂: 1.73 mm, paratypes: 1.64—1.78 mm, width of wing: holotype ♂: 0.67 mm, paratypes: 0.65—0.75 mm. Male surstylus (Fig. 39) short, broad, widening apicad, outer side with evenly placed long and thick bristles. Female cerci each with 4 moderately long, thin, straight or slightly curved hairs.

Length of body: holotype ♂: 2.27 mm, paratypes: 1.82—2.20 mm.



Holotype male: "Ghana, Nabogo, 21. 1. 1970, sifted, cow dung, leg. S. ENDRŐDY-YOUNGA (No. 410)". — Paratypes: 27 ♂, 27 ♀; data as for holotype (1 ♂, 1 ♀ paratypes deposited in Inst. R. Sci. Nat. Belgique, Brussels).

The new species is dedicated to DR. S. ENDRŐDY-YOUNGA, collector of the above species, who considerably enriched our collection with interesting fly materials.



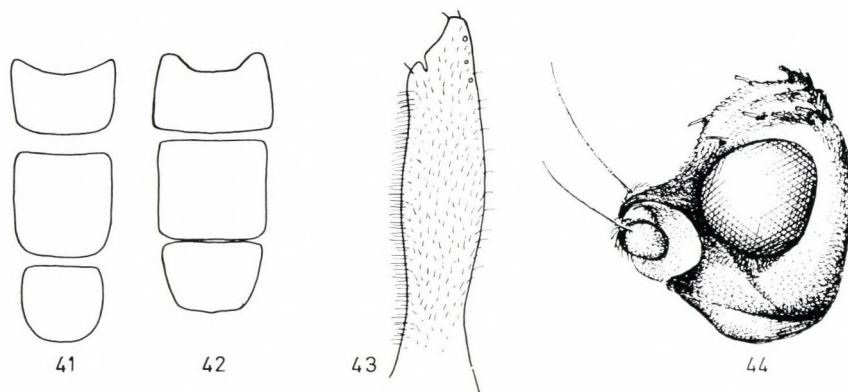
Figs. 38—40. *Lotobia* species, male genitalia. 38 = *L. pallidiventris* (MEIGEN, 1830), anterior (surstylus) and posterior hypopygial processes; 39 = *L. endrodyi* sp. n., surstylus; 40 = *L. kovacsi* sp. n., hypopygial processes and lateral part of hypandrium

*Lotobia endrodyi* sp. n. keys out to *temboensis* VANS. in VANSCHUYTBROECK's (1959) key, but its body is much smaller, and the male genitalia are completely different (cf. fig. 3 of VANSCHUYTBROECK, 1959). The closest relative of the new species is *kovacsi* sp. n., but it differs from by the fewer warts of the mesonotum and the shape and armature of the male surstyli (surstylus less widening, etc.) (Fig. 39, cf. Fig. 40).

### *Lotobia kovacsi* sp. n.

Body shining, dark brown, legs dark brown, fore coxae lighter brown. Facial plate raised into a flat boss between antennae, below it facial plate convex, below antennae at least half as high as its entire height. Mesonotum with 1 pair of comparatively wide stripes without tubercles in lateral *ac* position. Scutellar margin with 14 strong (and 2 minute basal) teeth on holotype male, 17 teeth on a paratype female. Wings colourless, veins light brown.  $mg_2 : mg_3 : mg_4 = 56 : 50 : 11$  (holotype),  $61 : 60 : 11$  (paratype). Veins  $r_{4+5}$  and  $m$  slightly upcurving in their whole length. Pigmented part of *cu* nearly reaching wing margin. Basal section of  $r_{4+5} : t_a - t_p : t_p$ ; ultimate section of  $cu = 26 : 36 : 14 : 16$  (holotype),  $23 : 33 : 13 : 15$  (paratype). Length of wing: holotype ♂: 1.88 mm, paratype ♀♀: 2.21—2.50 mm, width of wing: holotype ♂: 0.81 mm, paratype ♀♀: 0.93—1.03 mm. Female abdominal sternites 1+2 and

3 as those of males, sternite 4 calyciform. Male sternite 1+2 (Fig. 41) elongate, basal margin rounded, sternite 3 longer than wide, subquadrangular, but anterior margin rounded, sternite 4 comparatively short with only a slight posterior emargination, contrarily to that of *pallidiventris* (cf. Fig. 42). Male



Figs. 41—44. 41 = *Lotobia kovacsi* sp. n. holotype male, abdominal sternites 1+2—4; 42 = *L. pallidiventris* (MEIGEN, 1830), male abdominal sternites 1+2—4; 43—44 = *Ischiolepta vanschuytbroeckii* sp. n., holotype male: 43 = surstylus, 44 = head in semilateral view (vibrissa omitted)

surstylus (anterior hypopygial process) (Fig. 40) ham-shaped in profile, apex widely rounded, with many long and thick bristles, inner side with short but strong bristles. Posterior hypopygial process with characteristic, numerous, moderately long bristles, medially placed edge with fewer bristles than that of *pallidiventris*.

Length of body: holotype ♂: 2.55 mm, paratype ♀♀: 2.88—2.94 mm.

Holotype male (damaged, right antenna, fore tibiae and tarsi and right hind leg missing): "Abyssinia, KOVÁCS — Dire-Daua, 19. 11. 1911". — "*pallidiventris*" det. O. DUDA. — Paratypes: 2 ♀: data as for holotype.

I dedicate this new species to ÖDÖN KOVÁCS, traveller and naturalist, the collector of the type-series, who laid down his life for the knowledge of the fauna of Ethiopia.

DUDA knew only one species of *Lotobia* [*pallidiventris* (MEIGEN, 1830)], cf. DUDA, 1938. That is the reason why he identified all *Lotobia* specimens he saw as *pallidiventris*. But the new species is easily distinguishable from its congener. Contrarily to *pallidiventris*, it has 2 stripes without tubercles on the mesonotum, also the shape of male sternite 4 and the genitalia differ from those of *pallidiventris* (Fig. 40, 41, cf. Fig. 38, 42).

***Lotobia moyoensis*** (VANSCHUYTBROECK, 1959): 34 — Congo, leg. BALOGH et al., 1963—64: 6 ♂, 3 ♀: Lefinie reservation, Nambouli river, 13. 1. 1964 (No. 679); 1 ♀: ibid., gallery forest (No. 678); 1 ♂: Lefinie reservation, 13. 1. 1964 (No. 672); 1 ♀: ibid., Nambouli river, gallery forest, 7. 1. 1964 (No. 592). — The specimens were identified by a comparison with paratype specimens. Hitherto known only from Zaire.



**Lotobia pallidiventris** (MEIGEN, 1830) — Hungary: 22 ♂, 21 ♀ pinned specimens and some specimens in alcohol. — Italy, Sardinia (new): 12 ♂, 1 ♀: Belvi, 700 m, cattle dropping, 11. 6. 1977, leg. L. GOZMÁNY; Bulgaria: 1 ♂, 2 ♀: Varsec, 1–10. 8. 1929, leg. SZILÁDY. — Balearic Islands, Mongolia, Tunisia, Afghanistan (see PAPP 1973a, 1973b, 1977, 1978). — A Palearctic species; in my opinion all data from the Ethiopian Region need revision (see above).

**Ischiolepta denticulata** (MEIGEN, 1830) [= *nitida* (DUDA, 1920)] — Hungary: 1 ♂: Csévharaszt, 12. 5. 1969, on horse droppings, leg. L. PAPP. — USSR, Ukraina: 1 ♀: Hoverla, 16–17. 8. 1939, leg. DUDICH. — A very rare coprophagous species, larvae developing in horse droppings.

**Ischiolepta horrida** L. PAPP, 1973 — Mongolia: holotype ♂, 11 ♂, 7 ♀ paratypes (see PAPP 1973a).

**Ischiolepta longispina** L. PAPP, 1973 — Mongolia: holotype female (PAPP 1973a).

**Ischiolepta micropyga** (DUDA, 1938) — Hungary: 1 ♂: Magyarkút, Börzsöny Mts., forest, soil traps, 12. 8. 16. 9. 1973, leg. BAJZA—L. PAPP (see also PAPP 1976). — An exceptionally rare terricolous species, known only from Europe.

**Ischiolepta oedopoda** L. PAPP, 1972 — Hungary: holotype male (PAPP 1972). — Mongolia: 8 ♂, 5 ♀: see PAPP 1973a. — North Korea (new): 1 ♂: Prov. South Pyongan: Changlyong san, 50 km N of Pyongan and 15 km E from Sa-gam, 13. 8. 1971, leg. S. HORVATOVICH—J. PAPP (No. 172). — All known specimens of this species are in our collection. Although the females of this species are not surely identifiable, one additional female seems to represent this species (Caucasus, Kazbek, 1800 m, subalpine meadow, 13. 7. 1973, leg. VÁSÁRHELYI).

**Ischiolepta orientalis** (DE MEIJERE, 1908) — India: 1 ♂: Orissa, Daitari, sifted, 25. 11. — 4. 12. 1967, leg. TOPÁL (No. 941). — Vietnam (new): Hanoi, light trap, 4. 11. 1963, leg. MAN-NINGER. — A little known Oriental species.

**Ischiolepta paracrenata** (DUDA, 1920) [= *falcozi* (DUDA, 1921)] — Hungary: 1 ♂: Simontornya, meadow, sifted, 11. 4. 1911, leg. PILICH. "*S. parapusilla* DUDA" det. ARADI. Additional 4 ♂, 3 ♀ from soil traps (see PAPP 1976). — A European, terricolous species (hypopygial processes: Fig. 45, gonite: Fig. 46).

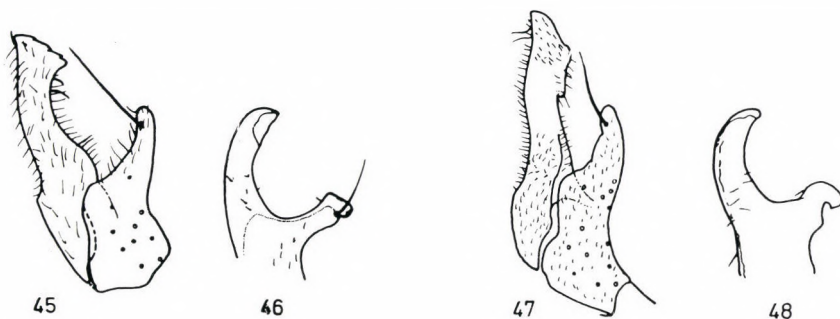
**Ischiolepta pusilla** (FALLÉN, 1820) — Hungary: 33 pinned specimens and some dozens of specimens in alcohol. — Austria: 1 ♂: THALHAMMER, Innsbruck. — Canada: 1 ♀: Hauterive, 24. 9. 1970, leg. I. SZABÓ. — Finland, Afghanistan, Tunisia (PAPP 1973b, 1977, 1978). — Argentina: 3 ♂: Río Negro, El Bolsón, Pampa Azcona, 350 m, 1. 11. 1961, leg. TOPÁL (No. 38). — In all probability, it was a Palearctic species originally, but human activity distributed it and is now to be found in every continent. New to South America.

**Ischiolepta scabricula** (HALIDAY, 1836) — India (new): 1 ♂: Orissa, Daitari, trapped by lamp globes during some months before 1. 12. 1967, leg. TOPÁL (No. 987). — Tanzania: 1 ♀: Tanganyika, Arusha, 3. 3. 1960, SZUNYOGHY: 1 ♂: Africa or., KATONA (= K. KITTENBERGER), Arusha-Ju, 12. 1905, "*scabricula*" det. O. DUDA. — Ghana (new): 1 ♀: Kwadaso, 9. 10. 1969, leg. S. ENDRÓDY-YOUNG (No. 400). — Hungary (new): Hortobágy N. P., Újszentmargita, pig dung, 30. 5. 1974, leg. S. MAHUNKA. — Afghanistan (see PAPP 1978). — Its distribution seems to cover the entire temperate and tropical Old World, although it is rather rare; the museums of the world preserve only some few exemplars beyond the above specimens.

### **Ischiolepta similis** sp. n.

Nearly related to *I. paracrenata* sp. n., separable only by the male genitalia. Body and legs weakly shining black. Frons in profile projecting less beyond eyes than width of eye. Antennal joint 3 reddish. Between wart rows *ac* medially a wartless stripe present only in anterior 1/3 of mesonotum, or no such zone present medially in some specimens. Slightly medially of lines *dc*, one pair of wartless stripes each, extending to posterior fourth of mesonotum. Margin of scutellum with 8 robust tubercles. Ventro-apical spine of hind tibia slightly

longer than 0.1 mm, hind metatarsus 2.5 times thicker and 1.71 times longer than tarsal joint 2. Wing with light brown veins.  $c_x = 3.95$ . Vein  $r_{4+5}$  upcurving terminally, its basal part only 0.46 as long as distance between cross-veins, terminal section of  $cu$  2.52 times longer than posterior cross-vein. Halteres light yellow. Tergites 2–4 in both sexes quadrately impressed medially, there more weakly chitinized than on margins of tergites, with countless minute and light grey microtricha. Male hypopygium slightly larger than that of *paracrenata*



Figs. 45–48. *Ischiolepta* species, male genitalia. 45–46 = *I. paracrenata* (DUDA, 1920): 45 = hypopygial processes, 46 = gonite; 47–48 = *I. similis* sp. n.: 47 = hypopygial processes, 48 = gonite

*nata* sp. n., surstylus otherwise formed (Fig. 47), gonite (Fig. 48) less forked than in *paracrenata* sp. n. (Fig. 46). Apical bristle on posterior hypopygial process shorter than that of *paracrenata* sp. n. The minute differences found in the configuration of the female postabdomen and those in the shape of the male and female sternites are insufficient for the separation of the two species.

Length of wing: holotype ♂: 2.71 mm, paratypes: 2.62–2.79 mm, width: holotype ♂: 1.03 mm, paratypes: 1.02–1.06 mm.

Body length: holotype ♂: 2.94 mm, paratypes: 2.74–3.09 mm.

Holotype male: “USSR, Больш. оз. у Ключевск. на р. Камч. А. Державин, 16. 4. [19]09” “*S. paracrenata* D. ♂”, det. DUDA. Paratypes: 3 ♂ 8 ♀: data as for holotype (2 ♂, 6 ♀ in the collection of the Zoological Institute, Academy of Sciences, Leningrad; 1 ♂, 2 ♀ in the Hungarian Natural History Museum).

The species *I. similis* sp. n. can safely be distinguished from *paracrenata* (DUDA, 1920) only by the male genitalia. True, the medial wartless stripe of the mesonotum in most of the *paracrenata* specimens extends to the posterior 1/3–1/4 of the mesonotum, whereas in the new species only the anterior 1/3 is free of tubercles (or this zone is entirely absent), this is still a less than completely reliable differentiating feature. However, there appear to be satisfactorily dependable characteristics of segregation in the shape of the male surstyli and gonites (Figs. 47, 48; cf. Fig. 45, 46).



***Ischiolepta vanschuytbroecki* sp. n.**

Body brown, legs light brown. Frons projecting anteriorly of eyes by almost width of eye (Fig. 44). Frons with white, proclinate, obtuse spines: 2 in upper orbital and 1 in outer vertical positions. Antennae small, spherical, originating from comparatively deep antennal foveae. Gena as wide as longitudinal axis of eye. Vibrissa thick, colourless, shorter than diameter of antennal joint 3. Mesonotum with one comparatively well ordered row of warts *dc*, and irregular row of warts *ac*. Between rows *dc* and *ac*, a relatively wide and wartless pair of stripes, a more or less ordered row of warts *ia*, and wartless zones also between the rows *ia* and *dc*. Scutellum only 1.5 times wider than long, marginally with 7, symmetrically placed and more than 0.05 mm long and very thick (basally at least 0.02 mm wide) teeth. Femora moderately incrassate. Fore femur thickening apicad, thickest subapically then abruptly attenuating. Ventro-apical spine of hind tibia black, 0.09 mm long, slightly arcuate. Hind metatarsus only 1.73 times as long as thick. Wing veins light brown. Vein  $r_{4+5}$  terminally upcurving, end of vein *m* slightly downcurving.  $c_x = 2.66$ .  $mg_3/mg_4 = 1.11$ ;  $t_a - t_p$ /basal section of  $r_{4+5} = 1.16$ . Tergite 5 divided, also sternite 5. Surstylus (Fig. 43) very long, comparatively narrow, apically slightly incised. Gonite weakly inclinate, apically obtuse.

Body length ♂: 1.91 mm.

Holotype male: "Congo, Sibiti, IRHO rain forest, 25. 11. 1963, leg. S. ENDRÖDY-YOUNGA (No. 237)".

The new species keys out in VANSCHUYTBROECK's key (1959) to the species *pusilla* FALLÉN, but the excrescences of both its head and mesonotum are different, and especially the male genitalia are completely different (surstylus very long, gonite not acute, etc.).

***Ischiolepta vaporariorum* (HALIDAY, 1836).** — Hungary: over 100 pinned specimens and several dozens in alcohol. In our Collection there are specimens also from Austria, East Germany, Belgium, Romania. — Finland, Balearic Islands, Tunisia, Afghanistan (PAPP 1973b, 1977, 1978). — A coprophagous species, known from the Western Palearctic and North America.

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## NAHRUNGSANSPRÜCHE EINIGER DIPLOPODEN- UND ISOPODEN-ARTEN IN MESOPHILEN LAUBWÄLDERN UNGARNS\*

Von

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(Eingegangen am 28. November 1977)

A study of the role in two hornbeam-oakwood forest stands of the Diplopod species with the highest individual density [*Leptoiulus proximus* NEMEC, *Chromotoiulus projectus* VERH., *Cylindroiulus luridus* (C. L. KOCH), *Unciger foetidus* (C. L. KOCH)] and of the dominant Isopod species [*Protracheoniscus amoenus* (C. L. KOCH)] in the decomposition of the early autumn ground litter, by the determination of food preferences and consumption of these animals.

Die vielseitigen Untersuchungen, womit seit mehreren Jahren der Verlauf der Streuzersetzung in zwei Hainbuchen-Eichenbeständen Ungarns unter Berücksichtigung des zootischen Faktors verfolgt wird, ermöglichen es — gewisse Tiergruppen betreffend — spezielle Teilprobleme herauszugreifen. Wie in vorausgehenden Arbeiten erörtert wurde (ZICSI, 1975; ZICSI und POBOZSNY, 1977), steht in diesen Beständen die Tätigkeit der großkörperigen Regenwurm-Arten im Mittelpunkt des Interesses, wobei jedoch — wie dies des öfteren betont wurde — die Rolle der übrigen Tiergruppen an der Streuzersetzung nicht unterschätzt werden soll. Da die Zersetzung der Laubstreu ausschlaggebend von den großkörperigen Lumbriciden-Arten gesteuert wird, ergeben sich im Verlauf der Zersetzung in den einzelnen Jahren bedeutende Unterschiede, die mit der Gestaltung der klimatischen Verhältnisse der verschiedenen Jahre im engsten Zusammenhang stehen (ISÉPY, 1977). Wie beobachtet werden konnte, verschwindet in Gegenwart dieser Tiere die gesamte Laubstreu-Decke bereits im Juni des darauffolgenden Jahres oder aber später, doch fast immer noch vor dem neuen Laubfall. Es ergeben sich also für die kontinuierliche Nahrungsversorgung der Bodentiere kürzere oder längere Perioden, in denen entweder überhaupt keine Nahrung oder solche zur Verfügung steht, die von ihnen unterschiedlich gern aufgenommen wird.

In dem Zusammenhang wurde eben deswegen das Ziel gesetzt festzustellen, wie sich der Laubkonsum in den Herbstmonaten vor dem Laubfall, bzw. bei Beginn des Laubfalles gestaltet, welche Blattarten von den verschiedenen Diplopoden- und Isopoden-Arten der untersuchten Waldbestände präferiert

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werden und welche Menge von ihnen verzehrt wird. Es lag uns daran zu erkunden, ob den Tieren in dieser Zeitspanne genügend Nahrung zur Verfügung steht, da gerade zu dieser Zeit der Konsum der großkörperigen Lumbriciden-Arten ansteigt (Tabelle 1), und, wie auch aus der Literatur bekannt (GERE, 1962), auch die Nahrungsansprüche der Diplopoden und Isopoden hoch sind.

Tabelle 1

*Laubkonsum großkörperiger Lumbriciden-Arten im Versuchsjahr 1975/76*  
(nach unveröffentlichten Angaben von A. Zicsi)  
Konsum in mg pro Tag auf 1 g Lebendgewicht bezogen

	Juni		September	
	Stieleiche	Buche	Stieleiche	Buche
<i>Lumbricus terrestris</i> L.	10,22	3,65	28,74	14,45
<i>L. polyphemus</i> (FITZ., 1833)	10,92	1,32	23,56	18,44
<i>Dendrobaena platyura platyura</i> (FITZ., 1833)	10,80	2,25	23,34	21,91
<i>D. p. depressa</i> (ROSA, 1893)	9,33	0	25,77	10,73
<i>D. p. montana</i> (ČERN., 1932)	4,73	0	14,00	8,13

Die Untersuchungen wurden mit Laubarten, die Anfang September im Waldbestand der Untersuchungsfläche im Vértes-Gebirge auf dem Boden vorgefunden wurden, durchgeführt. In diesem Hainbuchen-Eichenbestand, wo keine großkörperigen Lumbriciden-Arten vorkommen, ist die Besatzdichte der Diplopoden und Isopoden bedeutend höher als auf der Untersuchungsfläche im Cserhát-Gebirge (LOKSA, 1977). Um die Gestaltung der Streuverhältnisse im Monat September veranschaulichen zu können, greifen wir auf unsere Angaben der vorausgehenden Jahre zurück und geben auf Abb. 1 die Gestaltung der Niederschlagsverhältnisse und die im Monat September vorgefundene Streumenge an. Wie zu ersehen, lag im September 1976 bedeutend mehr Streu (alte und neugefallene gleicherweise) am Boden, als in den vorausgehenden Jahren. Dies läßt sich eindeutig mit den besonders trocknen Verhältnissen der vorausgehenden Monate erklären.

Wie aus der einschlägigen Literatur ersichtlich, befaßten sich bereits mehrere Autoren mit der Frage, welche Laubarten von Diplopoden und Asseln bevorzugt werden und warum (LYFORD, 1943; DUNGER, 1958, 1962, 1964; VAN DER DRIFT, 1951; STRIGANOVA, 1971). Im allgemeinen konnte festgestellt werden, daß überwintertes, mikrobiell zersetzteres Laub bevorzugt wird. Es konnte auch nachgewiesen werden, daß die Wasserkapazität, das C : N-Verhältnis, der N-Gehalt, der Ca-Gehalt, die Huminsäurekonzentration, der Gehalt an Polyphenol und Gerbstoffen verschiedener Blattarten die Nahrungswahl der Tiere beeinflußt. Unsererseits wurden ebenfalls chemische Analysen durchgeführt,

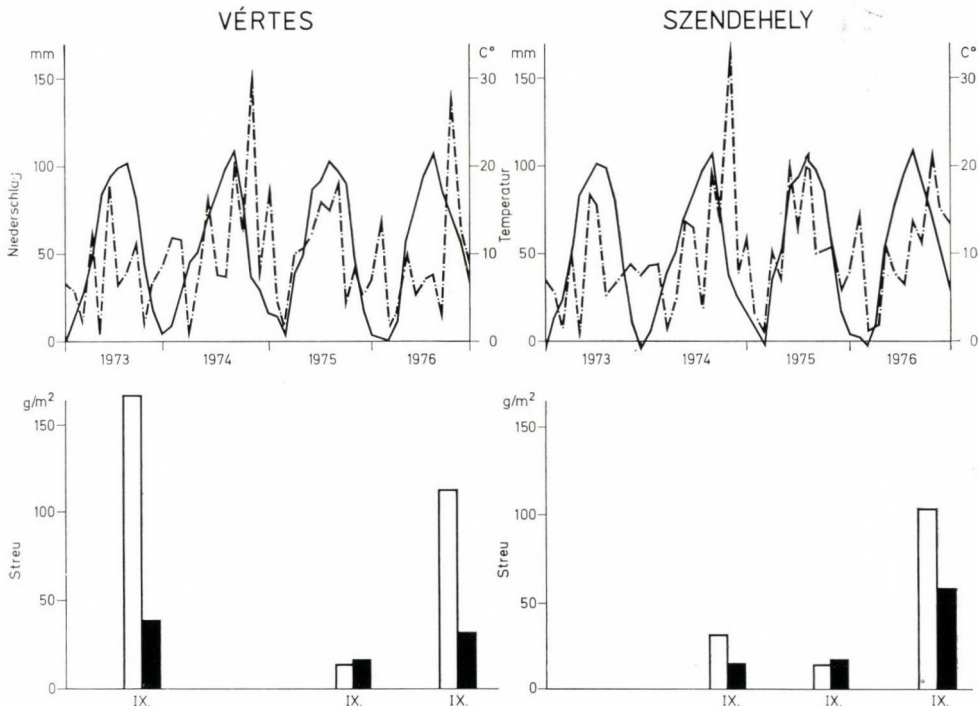


Abb. 1. Gestaltung der Streumenge (September 1976) in den untersuchten Waldbeständen im Zusammenhang mit den klimatischen Verhältnissen. — Niederschläge; — . — . — Temperatur; ■ frisches Fallaub; □ überwintertes Fallaub

um festzustellen, welcher, bzw. welche Komponente den Konsum der Versuchstiere beeinflussen.

**Untersuchungsmethode.** Die Nahrungspräferenz-Untersuchungen wurden mit 4 Diplo-poden-Arten [*Chromatoiulus projectus* VERH., *Leptoiulus proximus* NEMEC, *Cylindroiulus luridus* (C. L. KOCH), *Unciger foetidus* (C. L. KOCH)] und einer Assel-Art [*Protracheoniscus amoenus* (C. L. KOCH)] durchgeführt. Die Tiere wurden Anfang September 1976 im Versuchsbestand des Vértés-Gebirges gesammelt. Als Futter wurden diejenigen Blattarten angeboten, die Anfang September am Boden lagen, so daß ihnen die gleiche Nahrung, die auch im Freien vorlag, zur Verfügung stand. Es wurden 6 Blattarten verabreicht, u. zw.: frisch gefallenes Linden (*Tilia plathyphyllos* SCOP.) und Hainbuchenlaub (*Carpinus betulus* L.), Traubeneichen- (*Quercus petraea* METT.), Zerreichen- (*Q. cerris* L.) und Buchen- (*Fagus sylvatica* L.) sowie Hainbuchenlaub vom vorausgehenden Jahr. Die Untersuchungen wurden noch mit Stieleichenlaub (*Q. robur* L.) ergänzt, diese Blätter wurden jedoch aus dem Waldbestand des Cserhát-Gebirges geholt, da diese Baumart im Vértés-Gebirge nicht vorkam.

Die Tiere wurden in — wie bereits in vorausgehenden Untersuchungen von GERE (1958) sich gut bewährten — ausgebrannten, unemailierten Tongefäßen untergebracht (Grundfläche 18 × 18 cm² und 5 cm Höhe). Die Tongefäße wurden im Laboratorium in feuchten Sand gestellt, wodurch ständige Feuchtigkeit gesichert war. Von jeder Art wurden je 50 Exemplare in einem Versuchsgefäß untergebracht und von jeder Blattart je ein g zum Fraß angeboten. Die Untersuchungen wurden in zwei bzw. drei Wiederholungen je 10 Tage lang durchgeführt. Am Ende des Versuches wurden die Blattreste zurückgewogen, die Wiederholungen nach Blattarten gesondert gewertet. Da auch das Gewicht der Tiere bekannt war, wurde den Konsum in mg/Tag auf 1 g Lebendgewicht berechnet.<sup>1</sup>



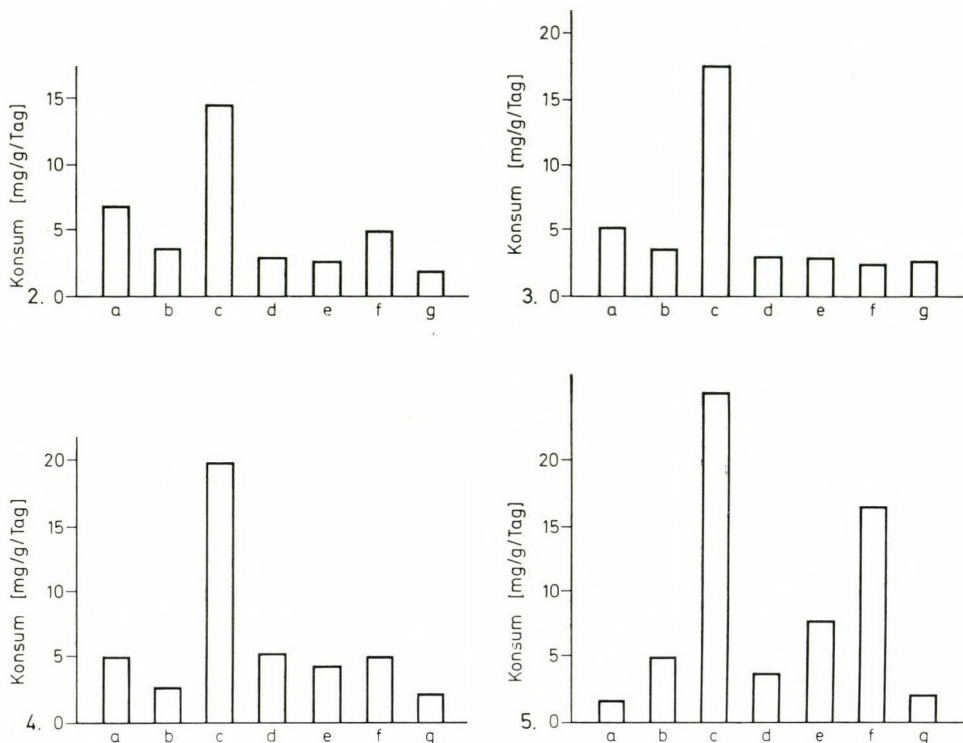


Abb. 2—5. 2 = Konsum von verschiedenen Blattarten bei *Leptoiulus proximus*. a = frische Lindenblätter, b = frische Hainbuchenblätter, c = überwinterte Hainbuchenblätter, d = überwinterte Stieleichenblätter, e = überwinterte Traubeneichenblätter, f = überwinterte Zerreichenblätter, g = überwinterte Buchenblätter. — 3 = Konsum von verschiedenen Blattarten bei *Chromatoiulus projectus*. a—g wie auf Abb. 2. — 4 = Konsum von verschiedenen Blattarten bei *Cylindroiulus luridus*. a—g wie auf Abb. 2. — 5 = Konsum von verschiedenen Blattarten bei *Unciger foetidus*, a—g wie auf Abb. 2.

Parallel mit den Fütterungsversuchen wurden Proben von den verschiedenen Blattarten auch für chemische Analysen genommen. Es wurden die gesamtorganische Substanz (Glühverfahren), der Gesamtstickstoff-Gehalt (Kjeldahl-Verfahren) und das C : N-Verhältnis bestimmt. Mit Hilfe der Streustoffanalyse (SCHLICHTING—BLUME, 1966) wurden folgende Stoffgruppen bestimmt: Fette und Gerbstoffe, Zucker und Stärke, Hemizellulose und Pektin, Zellulose, Lignin und Eiweiß. Ferner wurden bei den einzelnen Blattarten der leichtlösliche, der leichtlösliche potenzielle Stickstoffgehalt sowie die sogenannten Reserve-Stickstoffmengen bestimmt (HARGITAI, 1964).

**Ergebnisse.** Die Ergebnisse der Präferenz-Versuche werden auf Abb. 2—6 zusammengefaßt. Wie aus den Abb. 2—5 zu ersehen, bevorzugen alle 4 Diplo-poden-Arten einheitlich die Hainbuchenblätter des vorausgehenden Jahres. Bezüglich der übrigen Blattarten lassen sich im Konsum bei den einzelnen Arten Unterschiede nachweisen. Bei *Leptoiulus proximus* (Abb. 2) und bei *Chromatoiulus projectus* (Abb. 3) stehen die frisch gefallenen Blätter der Linde an zweiter Stelle. *Cylindroiulus luridus* (Abb. 4) zeigte im weiteren Konsum keine bedeutenden Unterschiede zwischen den frisch gefallenen Lindenblättern,

den überwinterten Stiel- und Zerreichenblättern, selbst auch die Traubeneichenblätter werden mit gleicher Intensität befressen. Interessant gestaltete sich im weiteren die Präferenzreihe bei *Unciger foetidus* (Abb. 5). Hier steht das überwinterte Laub der Zerreiche an zweiter Stelle, dieser folgt das der Traubeneiche, Stieleiche, an vorletzter Stelle nur die frisch gefallenen Blätter der Linde. Das einjährige Buchenlaub bleibt bei allen Arten an letzter Stelle.

Gänzlich anders gestaltet sich die Präferenzreihe bei der Assel-Art *Protracheoniscus amoenus* (Abb. 6). Die Blätter der Stiel- und Zerreiche sowie der Buche wurden kaum angerührt, an erster Stelle hingegen stehen die frisch gefallenen Lindenblätter, diesen folgen das überwinterte Laub der Hainbuche, frische Hainbuchenblätter und die überwinterten Traubeneichenblätter.

Zum Vergleich seien die Angaben von DUNGER (1962) erwähnt, der bei frisch gefallenen Blättern mit *Julus scandinavicus* folgende Präferenzreihe erhielt (es werden nur die Blattarten berücksichtigt, die auch von mir verfüttert wurden): *Tilia cordata*, *Carpinus betulus*, *Fagus silvatica*, *Quercus robur*. STRIGANOVA (1971) führte mit drei Diplopoden-Arten (*Pachyiulus foetidissimus*, *Cylindroiulus ruber* und *Julus colchicus*) ähnliche Untersuchungen durch und konnte für alle drei Arten die gleiche Präferenzreihe: Hainbuche, Ahorn, Eiche, Buche nachweisen. Die Buche wurde auch in ihren Versuchen kaum oder überhaupt nicht berührt.

Von den Ergebnissen der chemischen Analysen werden in Tabelle 2 die Angaben der gesamtorganischen Substanz, der Stickstoffgehalt, das C : N-Verhältnis und der pH zusammengefaßt. Abbildung 7 veranschaulicht die Ergebnisse der Streustoffanalyse, während Abb. 8 die Menge der verschiedenen Stickstoffformen in den einzelnen Blattarten wiedergibt.

Die höchste Gesamtorganische Substanz wiesen die frischen Blätter der Hainbuche und Linde, bzw. die überwinterten Zerreichenblätter auf. Den größ-

Tabelle 2

Chemische Komponente der einzelnen Blattarten

	Gesamtorganische Substanz %	Gesamtstickstoff (mg/100 g)	C : N	pH dest. Wasser
<i>Tilia platyphyllos</i> frisch	90,1	1204	43,4	5,1
<i>Carpinus betulus</i> frisch	92,8	1589	33,9	4,2
<i>C. betulus</i> überwintert	84,3	2915	16,8	5,1
<i>Quercus robur</i> überwintert	81,8	1793	26,5	4,8
<i>Q. petraea</i> überwintert	86,5	2381	21,1	4,8
<i>Q. cerris</i> überwintert	91,9	1422	37,5	4,5
<i>Fagus silvatica</i> überwintert	86,2	1820	27,5	5,1



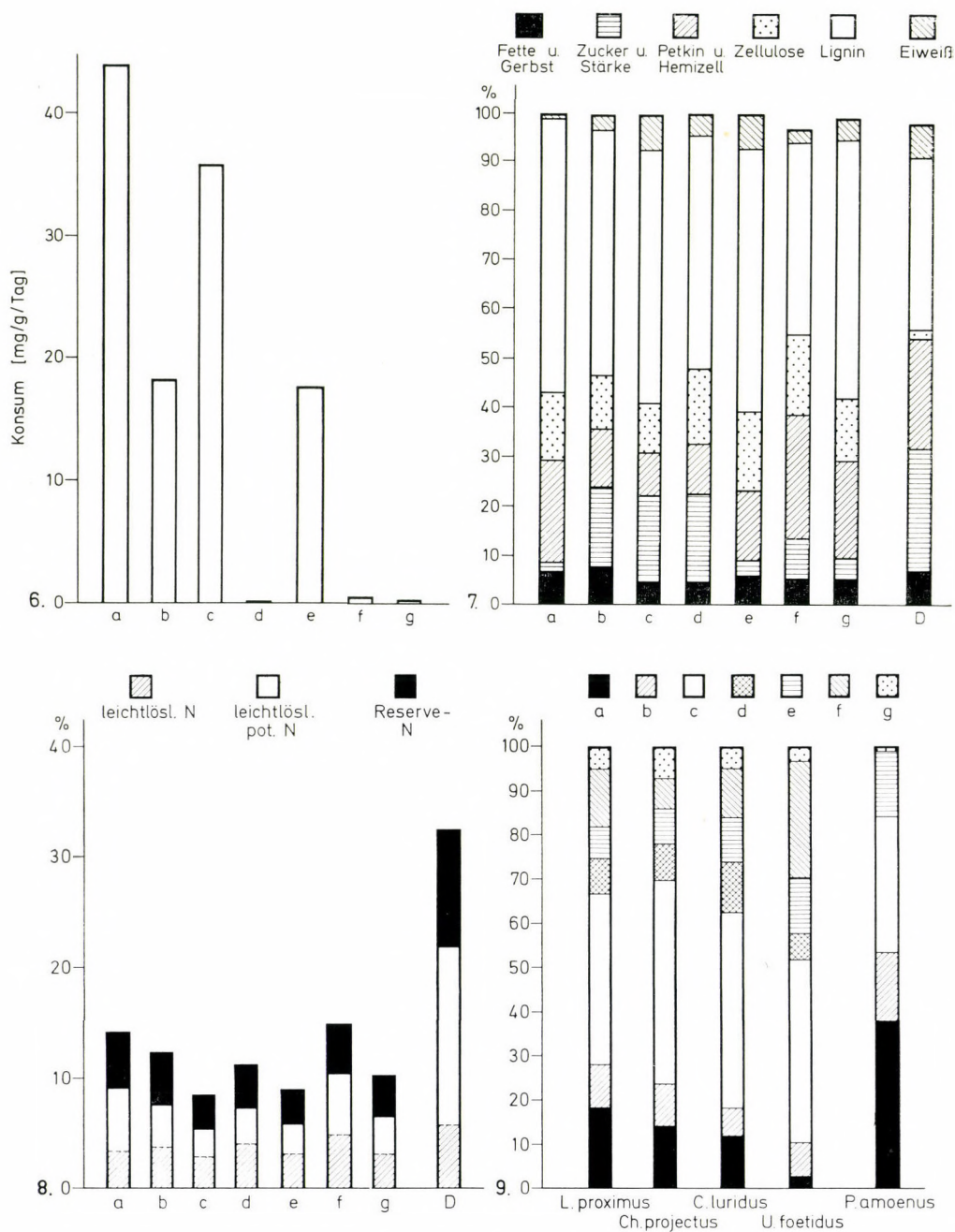


Abb. 6—9. 6 = Konsum von verschiedenen Blattarten bei *Protracheoniscus amoenus*. a—g wie auf Abb. 2. — 7 = Verteilung der verschiedenen Stoffgruppen-Mengen in den Blattarten (in % der Gesamtorganischen Substanz). a—g wie auf Abb. 2; D = Diplopoden-Lösungen. — 8 = Verteilung der verschiedenen Stickstoff-Formen in den Blattarten (in % des Gesamtstickstoffes). a—g wie auf Abb. 2; D = Diplopoden-Lösungen. — 9 = Konsum von verschiedenen Blattarten bei den untersuchten Diplopoden- und Assel-Arten (in % der gesamt konsumierten Nahrungsmenge). a—g wie auf Abb. 2

ten Stickstoffgehalt zeigten die überwinterten Hainbuchenblätter und das Laub der Traubeneiche. Die beiden letzteren besaßen auch das engste C : N-Verhältnis.

Von den verschiedenen Stoffgruppen (Abb. 7) konnte die niedrigste Menge von Fetten und Gerbstoffen im überwinterten Hainbuchen- und Stieleichenlaub, die größte Menge im frischen Hainbuchenlaub nachgewiesen werden. Verhältnismäßig hoch ist der wasserlösliche Kohlenhydrat-Gehalt (14,6 — 16,1%) der beiden verschiedenen Hainbuchenblätter, bzw. des überwinterten Stieleichenlaubes. Die Menge der Hemizellulose ist im frischen Lindenlaub (18,7%), im überwinterten Zerreibenlaub (23,4%) und im ebenfalls überwinterten Buchenlaub (17,3%) am höchsten. Bezüglich des Eiweißes erhielten wir die höchsten Werte beim überwinterten Hainbuchen- und Traubeneichenlaub.

Der leichtlösliche und leichtlösliche potenzielle Stickstoffgehalt war im überwinterten Zerreibenlaub, bzw. im frischen Lindenlaub am höchsten, am niedrigsten in dem von Diplopoden bevorzugten, überwinterten Hainbuchenlaub.

**Auswertung der Ergebnisse.** In Tabelle 3 werden das Durchschnittsgewicht der Versuchstiere — bestimmt aufgrund des Durchschnittes von 150 Exemplaren — sowie der von den verschiedenen Blattarten auf 1 g Lebendgewicht pro Tag berechnete Konsum angeführt. Die letzteren stimmen bei den Diplopoden gut mit den aus der Literatur (GERE, 1956, 1963; BOCK, 1963; STRIGANOVA, 1971) bekanntgewordenen Angaben überein. Verhältnismäßig hoch ist der Konsum von *Protracheoniscus amoenus*, nach Angaben der Literatur konsumieren die Asseln 3% ihres Körpergewichtes pro Tag (HUBBELL et al., 1965). GERE (1956) berechnete bei *Protracheoniscus politus* Werte von 1,94 — 4,01%, während bei mir Werte von 11% nachgewiesen werden konnten.

Ein Vergleich der Konsumwerte mit den chemischen Analysenergebnissen weisen keinen eindeutigen Zusammenhang zwischen der präferierten Nahrung und deren chemischen Zusammensetzung auf. Obwohl das engste C : N-Verhältnis besitzende überwinterte Hainbuchenlaub von den Diplopoden bevorzugt wurde, wies bei den übrigen Blattarten die Präferenzreihe und das C : N-Verhältnis keine eindeutige Korrelation auf. Der Konsum wird auch nicht von der veränderlichen Menge des Gerbstoff- und Stickstoffgehaltes eindeutig beeinflusst. Und da die Verteilung der einzelnen Stoffgruppen ebenfalls nicht eindeutig die Präferenzreihe erklären kann, sind wir geneigt anzunehmen, daß die Konsummenge nicht an das Vorhandensein eines bzw. einiger chemischer Komponente, d. h. an deren Menge gebunden ist, sondern vielmehr eine artspezifische Eigenschaft ist, da sich die einzelnen Arten von der gleichwertigen Nahrung — wie dies aus Abb. 9 zu ersehen — verschieden ernährten. Dieser artspezifisch bedingte Unterschied spielt — gerade bei verschiedenem Rottezustand der Laubsubstanzen — in der kontinuierlichen Nahrungsversorgung unter natürlichen Verhältnissen in Hainbuchen-Eichenbeständen eine ausschlaggebende Rolle. Ganz besonders gilt dies für die verschiedenen Eichen-Arten und



Tabelle 3

Konsum der verschiedenen Versuchstiere in mg/g/Tag

	Durchschnittsgewicht eines Tieres mg	<i>Tilia platyphyllos</i> frisch	<i>Carpinus betulus</i> frisch	<i>Carpinus betulus</i> überwintert	<i>Quercus robur</i> überwintert	<i>Quercus petraea</i> überwintert	<i>Quercus cerris</i> überwintert	<i>Fagus sylvatica</i> überwintert	Zusammen
Diplopoden									
<i>L. proximus</i>	57,7	6,83	3,60	14,50	2,86	2,62	4,92	1,90	37,2
<i>Ch. projectus</i>	108,9	5,39	3,59	17,58	3,08	3,03	2,56	2,77	38,0
<i>C. luridus</i>	69,1	5,07	2,60	18,88	5,01	4,20	4,74	2,03	42,5
<i>U. foetidus</i>	63,9	1,73	5,02	25,35	3,68	7,87	16,40	2,08	62,1
Isopode									
<i>P. amoenus</i>	21,9	43,93	18,31	35,83	0	17,68	0,62	0,10	116,5

im späteren auch für die Buchenblätter. Weitere solche und ähnliche Untersuchungen könnten zur Klärung des Vorkommens verschiedener Diplopoden-Arten in den einzelnen Waldbeständen führen.

Anschließend an die Fütterungsversuche wurden die Losungen der Diplopoden auch chemisch analysiert (die geringe Menge der Assel-Lösungen eignete sich nicht für solche Untersuchungen). Wir haben an dieser Stelle nur die wichtigsten Ergebnisse hervor.

Aus der Verteilung der Stoffgruppen (Abb. 7, Kolumne D) geht einwandfrei hervor, daß in den Losungen der Diplopoden sich die Menge der Zellulose stark vermindert hat, d. h. die Diplopoden sind an der Zersetzung der Zellulose — wie dies STRIGANOVA (1971) bei ihren Versuchen ebenfalls nachweisen konnte — beteiligt. Aber auch im Abbau der Stickstoff-Formen (Abb. 8, Kolumne D) darf ihre Rolle nicht unterschätzt werden, da in den Losungen, bezogen auf das Ausgangsmaterial, die leichtlösliche und leichtlösliche potenzielle Menge des Stickstoffes um das 3-fache gestiegen ist. Dieser Umstand wirkt sich auf den Stoffkreislauf der Vegetation in den betreffenden Waldbeständen besonders günstig aus.

Mit Berücksichtigung der Abundanzwerte des Monats September (LOKSA, 1977) läßt sich für beide Versuchsbestände (Vértes- und Cserhát-Gebirge) anhand der erlangten Konsumwerte die streuzersetzende Tätigkeit der dominante Diplopoden und Assel-Arten annähernd errechnen. Im Vértes-Gebirge verzehren die 4 Diplopoden-Arten täglich 0,7% der gesamten Laubstreu, die dominante Assel-Art 0,6%. Im Cserhát-Gebirge (3 Diplopoden-Arten) 0,6%, die Asseln 0,4% (Tabelle 4).

Vom überwinterten Laub beträgt der Konsum im Vértes-Gebirge bei den Diplopoden auf einen Monat berechnet 2,17%, im Cserhát-Gebirge 2,28%. Vom

Tabelle 4

Laubkonsum der Diplopoden und Isopoden in den beiden untersuchten Waldbeständen

	Gesamt- konsum eines Tieres mg/Tag	Vértes-Gebirge		Cserhát-Gebirge	
		A/m <sup>2</sup> (LOKSA, 1977)	Gesamt- konsum pro 1 m <sup>2</sup> mg/Tag	A/m <sup>2</sup> (LOKSA, 1977)	Gesamt- konsum pro 1 m <sup>2</sup> mg/Tag
Diplopoden					
<i>L. proximus</i>	2,14	12,8	27,4	14,4	30,8
<i>Ch. projectus</i>	4,12	6,4	26,4	1,6	6,6
<i>C. luridus</i>	2,93	9,6	28,1	—	—
<i>U. foetidus</i>	3,96	4,8	19,0	14,4	57,0
Isopoden					
<i>P. amoenus</i>	2,55	25,6	65,3	22,4	57,1

frischen Laub macht dies im Vértes-Gebirge 1,97%, im Cserhát-Gebirge 0,87% aus. Die Assel-Art konsumiert vom überwinterten Laub 0,82% bzw. 0,78%, vom frischen Laub im Vértes-Gebirge 3,27%, im Cserhát-Gebirge 1,63% im Monat September (Tabelle 5).

Wie aus den angeführten Angaben ersichtlich, ist in den untersuchten Waldbeständen der kontinuierliche Konsum für die Diplopoden und Isopoden auch in den Frühherbst-Monaten gesichert. Die Lumbriciden und Enchytraeiden (DÓZSA-FARKAS, 1978; ZICSI, nach mündlicher Mitteilung) bevorzugen in erster Linie die überwinterte Eichen- und Buchenstreu, von den frischge-

Tabelle 5

Konsum der Diplopoden und Isopoden im Monat September  
pro m<sup>2</sup> in % der frischen bzw. überwinterten Fallaubmenge

	Konsum eines Tieres im Monat September (mg)		Konsum im Monat September pro m <sup>2</sup>			
			Vértes-Gebirge		Cserhát-Gebirge	
	frisches Fallaub	über- wintertes	frisches Fallaub in %	über- wintertes	frisches Fallaub in %	über- wintertes
Diplopoden						
<i>L. proximus</i>	18,0	46,2	0,72	0,53	0,46	0,65
<i>Ch. projectus</i>	29,1	93,5	0,58	0,55	0,83	0,15
<i>C. luridus</i>	15,9	72,0	0,48	0,62	—	—
<i>U. foetidus</i>	12,9	105,9	0,19	0,46	0,33	1,48
Isopode						
<i>P. amoenus</i>	40,8	35,8	3,27	0,82	1,63	0,78



fallenen Linden- und Hainbuchenblättern ernähren sie sich nur spärlich. Die untersuchten Diplopoden und Asseln spielen im Abbau der frischgefallenen Hainbuchen- und Lindenblätter bereits im Frühherbst eine bedeutende Rolle.

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TETHINIDEN AUS DER MONGOLEI  
MIT EINEM VERZEICHNIS  
DER PALÄARKTISCHEN ARTEN  
(DIPTERA: ACALYPTRATAE)\*

Von

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(Eingegangen am 21. November 1977)

Five Tethinid species, found in the material (90 specimens) collected by DR. Z. KASZAB during his six expedition to Mongolia (1963—1968) are discussed; two of them new for science (*Pelomyiella mongolica* sp. n. and *P. nigra* sp. n.). A key for the Palaearctic species of the genus *Pelomyiella*, and a check-list for the palaearctic species of Tethinids are given. Some new taxonomic, faunistic and zoogeographic data, corrections and supplementary remarks are added.

Auf seinen 6 Expeditionen in der Mongolei (1963—1968) sammelte DR. Z. KASZAB insgesamt 90 Tethiniden-Exemplare, die nach Bearbeitung des Materials 5 Arten ergaben. Von diesen 5 Arten erwiesen sich zwei *Pelomyiella mongolica* sp. n. und *P. nigra* sp. n. auch neu für die Wissenschaft. Mehr als zwei Drittel der Exemplare gehören diesen beiden neuen Arten an. Aus der Mongolei waren bisher keine Tethiniden-Arten bekannt und auch aus dem asiatischen Teil des Paläarktikum nur drei Arten. Von den letzteren konnten nun auch 2 in der Mongolei nachgewiesen werden.

Da von den 5 Arten aus der Mongolei 4 der Gattung *Pelomyiella* angehören, ferner, da kein Schlüssel zur Begrenzung der Arten vorliegt, gebe ich nachstehend für die paläarktischen Arten einen Bestimmungsschlüssel.

Bestimmungstabelle für die paläarktischen Arten der Gattung  
*Pelomyiella* Hendel, 1934

- 1 (2) Nur eine Postalarborste vorhanden, innere fehlt. Von den 2 Paar Orbitalborsten vorderes Paar verkümmert, selten aber auch fehlend. Backen von sehr feinen gelblich-weißen Härchen bedeckt (manchmal auch bei starker Vergrößerung nur schwer zu erkennen!). Orbiten ohne mikroskopisch feine Härchen **mallochi** (STURTEVANT, 1923)
- 2 (1) Zwei Postalarborsten vorhanden, innere stets schwächer entwickelt als äußere. Zwei Paar Orbitalborsten, entweder nahezu gleich stark oder das vordere verkümmert. Backen von feinen, deutlich erkennbaren, schwarzen Härchen bedeckt. Orbiten mit mikroskopisch feinen Härchen.
- 3 (4) Vorderes Orbitalborsten-Paar verkümmert. Augen länglichoval, immer höher als lang. Vorderrand der grauen Abdominaltergite braun. Letzter Abschnitt der *m* nahezu fünfmal so lang wie der vorletzte Abschnitt. Tarsenglieder, mit Ausnahme der beiden letzteren, bräunlichgelb **hungarica** CZERNY, 1928

\* Ergebnisse der zoologischen Forschungen von Dr. Z. Kaszab in der Mongolei (Nr. 430).



- 4 (3) Beide Orbitalborsten-Paare ungefähr gleich stark. Augen rund oder queroval. Vorder-  
rand der grauen Abdominaltergite nicht braun. Letzter Abschnitt der *m* ungefähr  
dreimal-viermal so lang wie der vorletzte Abschnitt. Tarsenglieder entweder gänzlich  
schwarz oder nur die 2—3 letzten Glieder.
- 5 (6) Distalhälfte der Vorderschenkel ohne anteroventralen, schwarzen, starken dornartigen  
Stachel. Augen rund. 3. Fühlerglied stets teilweise gelb. Tarsenglieder, mit Ausnahme  
der letzteren, bräunlichgelb **cinerella** (HALIDAY, 1839)
- 6 (5) Distalhälfte der Vorderschenkel mit anteroventralen, kräftigen, 1—4, schwarzen dorn-  
artigen Stacheln. Augen rund oder queroval. 3. Fühlerglied entweder schwarz, oder  
am Ventralansatz wenigstens gelb. Tarsenglieder entweder vollkommen oder größten-  
teils schwarz.
- 7 (10) Metatarsen, mindestens die der mittleren und hinteren Beine sowie häufig das fol-  
gende Tarsenglied auch gelblichbraun. Ein Teil des schwarzen 3. Fühlergliedes, min-  
destens jedoch der Ventralansatz, gelb. Augen etwas queroval. Zwei einander nahe  
stehende Arten, die mit Sicherheit nur aufgrund der Geschlechtsorgane voneinander  
getrennt werden können.
- 8 (9) Backenbreite  $1/3$  (♂), bzw.  $1/2$  (♀) der Augenhöhe. Hypopygium gedrunken, ventraler  
Fortsatz parallellrandig und die Spitze in kurzem, breitem Bogen abgerundet. Ende der  
Goniten kolbenförmig, die kräftigen schwarzen Borsten sind in der ventralen Hälfte  
der Gonite regelmäßig verteilt **mongolica** sp. n.
- 9 (8) Backenbreite  $1/2$  (♂♀) der Augenhöhe. Hypopygium gestreckt, ventraler Fortsatz ver-  
schmälert sich der Spitze zu und Ende in kurzem Bogen abgerundet. Ventrales Ende  
der Goniten nicht kolbenförmig, Zahl der kräftigen schwarzen Borsten bedeutend  
weniger und sie gruppieren sich in der ventralen Spitze der Gonite  
**obscurior** (BECKER, 1907)
- 10 (7) Beine mit Tarsengliedern zusammen sowie 3. Fühlerglied vollkommen schwarz. Augen  
rund **nigra** sp. n.

1. **Pelomyiella cinerella** (HALIDAY, 1839). — Untersuchtes Material. **Archangaj**  
**aimak**: NO-Ecke des Sees Ogij nuur, 1350 m, 2. VII. 1964 (Nr. 250), 1 ♀. — **Suche-**  
**baator aimak**: Chadatin-bulan, 60 km N von Somon Bajanterem, 950 m, 31. VII. 1965  
(Nr. 340), 1 ♀. — **Čojbalsan aimak**: 15 km N von Somon Galuut, 850 m, 17. VIII.  
1965 (Nr. 433), 1 ♀. — **Chentej aimak**: 20 km SW von Somon Norovlin, 900 m, 19.  
VIII. 1965 (Nr. 449), 1 ♂. — **Uvs aimak**: zwischen dem See Örog nuur und der Stadt  
Ulaangom, 2—7 km OSO vom Paß Ulaan davaa (60—65 km NW von Ulaangom), 1690—  
1950 m, 28. VI. 1968 (Nr. 1032), 1 ♀. — **Bajan-Ölgij aimak**: NO-Ecke des Sees  
Tolbo nuur, 2100 m, 1. VIII. 1968 (Nr. 1050), 1 ♀. — 6 Exemplare.

An den mongolischen Exemplare konnten keine wesentlichen, abweichenden äußeren  
morphologischen Merkmale — die äußeren Geschlechtsorgane mit einbegriffen — bei einem  
Vergleich mit den europäischen Exemplaren vermerkt werden.

Unter den Tethiniden sind, unseren heutigen Kenntnissen nach, verhältnismäßig viele  
Arten mit disjunkter Verbreitung. Diese Art gehört, aufgrund der in der Mongolei vorkom-  
menden Exemplare, jetzt ebenfalls zu den disjunkt verbreiteten Arten. Sie war bisher nur aus  
dem östlichen Ufergebiet des Atlantischen Ozeans einschließlich des Ufergebietes von Irland  
und den Kanarischen Inseln bekannt. Der einzige kontinentale Fundort ist die Umgebung von  
Magdeburg (Süldorf), welcher gleichzeitig der bisher östlichste des Vorkommens der Art war.

2. **Pelomyiella mallochi** (STURTEVANT, 1923). — Untersuchtes Material. **Uvs aimak**:  
22 km WSW von Somon Zuungobi, 980 m, 26. VI. 1968 (Nr. 1018), 1 ♀; Senke des Sees Uvs  
nuur am SW Rand des Sees, 84 km W von Somon Zuungobi und 63 km O von der Stadt  
Ulaangom, 790 m, 26. VI. 1968 (Nr. 1020), 1 ♂. — **Bajan-Ölgij aimak**: NO-Ecke des  
Sees Tolbo nuur, 2100 m, 1. VII. 1968 (Nr. 1050), 3 ♂, 1 ♀. — **Bulgan aimak**: 11 km  
W von Somon Bajannuur am Südrand des Sees Bajan nuur, 1000 m, 24. VII. 1968 (Nr. 1145),  
1 ♂, 1 ♀. — 9 Exemplare.

Die mongolischen Exemplare dieser kleinsten Art der Gattung (erreichen kaum 2 mm)  
stimmen mit den europäischen fast ganz überein. Der wesentlichste Unterschied zwischen  
ihnen, bzw. zwischen der Beschreibung von CZERNY (1928: 3) besteht im Verhältnis des letzten  
bzw. vorletzten Abschnittes der *m* ( $m_3 : m_4$ ), welches bei den mongolischen Exemplaren 1 : 4,  
bei CZERNY 1 : 6 beträgt. Nordamerikanische Exemplare, woher die Art beschrieben wurde,  
konnten von mir nicht untersucht werden, den Typus der Art *nachtzei* CZERNY, 1928, welcher  
ein Synonym der Art *mallochi* ist, wurde von mir hingegen nachbestimmt, wobei festgestellt  
werden konnte, daß das Verhältnis der  $m_3 : m_4$  mit dem der mongolischen Exemplare überein-  
stimmt. Es muß jedoch bemerkt werden, daß das Verhältnis bei den *mallochi* Exemplaren  
aus Ungarn von  $m_3 : m_4$  bei den Männchen 1 : 6, bei den Weibchen 1 : 5 beträgt. Diese Anga-



ben weisen einerseits darauf hin, daß überprüft werden muß, ob *kuntzei* und *mallochi* synonym sind, andererseits, daß dies Verhältnis bei den beiden Geschlechtern anders sein kann, da in der Backenhöhe (bei den Weibchen immer höher als bei den Männchen) ebenfalls bei den Geschlechtern Unterschiede bestehen. Um dies entscheiden zu können, müßte eine Revision der Arten durchgeführt werden.

Holoarktische Art, die in Nord-Amerika so an den Meeresküsten wie im Inland in Biotopen mit salzigen Böden weitverbreitet ist. In Europa ist sie nur von wenigen Stellen bekannt, ein Vorkommen ist an der Meeresküste aus England und von der Insel Borkum gemeldet worden und vom Festland aus dem Ufergebiet des Fертő-Sees (österreichische Seite) und aus Ungarn.

Da mir die Gelegenheit geboten wurde, die im Zoologischen Institut der Akademie der Wissenschaften der UdSSR, Leningrad, aufbewahrten mittelasiatischen Arten von BECKER zu überprüfen, konnte — wie dies aus der Beschreibung bereits anzunehmen war — festgestellt werden, daß die unter der Benennung »*Tethina illota* CURTIS« angeführten Exemplare von BECKER (1907: 308) zum Teil mit *P. mallochi* identisch sind. Es stellte sich heraus, daß 2 von den 4 Exemplaren tatsächlich mit *P. mallochi* (»Chabirga-oz Baga Čadamin, v. Čajd. ROBKOZLOV 3—11. VI. 95«, 1 ♂ 1 ♀) übereinstimmen. Von den anderen beiden Exemplaren ist die eine *Rhinoessa czernyi* HENDEL, 1934 (»Kurlyk, Baingol vost. Čajdam. ROBKOZLOV 28. V. 95«, 1 ♀), die andere »Ljukčjun, najuv, ot Turfana 42 3/4° Ssch. ROBKOZLOV 28. IX.—8. V. 95«) eine Drosophiliden-Art (*Scaptomyza pallida* ZETT. det. L. PAPP!). Ferner muß noch erwähnt werden, daß von den anderen 4 Arten BECKER's (»*Tethina obscurior* n. sp.«) eine (»Kurlyk, Baingol vost. Čajdam. ROBKOZLOV 16.—24. V. 95«) ebenfalls dieser Art angehörte. Demnach war diese Art auch aus dem asiatischen Teil des Paläarktikum bereits bekannt (wenn auch unter anderem Namen) und wurde jetzt auch in der Mongolei erbeutet.

### 3. *Pelomyiella mongolica* sp. n.

♂. — Körperfärbung dunkelgrau, mit ausgedehntem, mattglänzendem, grünlichem Schimmer sowie teilweise mit silbergrauen Bestäubung. Kopf etwas höher als lang (8,5 : 7) und etwas breiter als hoch (10 : 8,5). Augen schrägoval, Verhältnis der Längs- und Queraxe wie 6,3 : 5. Stirn vorn etwa halb so breit wie am Scheitel (2,5 : 5,5), Vorderhälfte rötlichgelb. Frontorbitalleisten schmal und silberweiß bestäubt, darauf mikroskopisch feine Härchen. Gesicht, Wangen und Backen weißlichgelb bereift. Backenbreite etwa 1/3 der Augenhöhe (2,2 : 6,2). Backen mit verstreuten, feinen schwarzen Härchen, an der Vorder- ecke mit einer ziemlich starken Vibrisse, dahinter mit 5—6 Peristomalborstchen. Hintere Hälfte der Stirn, Ozellendreieck, Scheitel und Hinterkopf grün-schimmernd, schwärzlichgrau. Fühler schwarz, aber Innenseite des 3. Gliedes sowie vor und ventral rötlichgelb. 3. Glied oben mit einer stumpfen Ecke. Fühlerborste schwarz, äußerst kurz pubescent, mit verdicktem, zweigliedrigem Basalteil. Kopfchaetotaxie: *pvt*, *vti*, *vte*, *oc*, 2 *ors*; *poc*, *if* fehlen. Die zwei *ors* fast gleich lang, *oc* stark, ungefähr so lang wie *vti*.

Thorax und Schildchen dunkelgrau, grünlich schimmernd. Thoraxchaetotaxie: 1 *h*, 2 *n*, 1 *prsu*, 1 *ia*, 2 *pa*, 1 + 3 *dc*, 1 *pp*, 1 *m*, 1 *st*, 2 (Paar) *sc*. Beine schwarz, nur die Schenkelringe und die Kniegelenke sowie die ersten zwei Tarsenglieder gelblichbraun. Hüften und Schenkel silberweiß bereift, grünlich schimmernd. Distalhälfte des Vorderschenkels anteroventral mit 2 starken, glänzenschwarzen, dornartigen Stacheln, antero- und posterodorsal mit 5 langen, haarartigen Borsten, die letzteren länger als der Durchmesser des Vorder-



schenkels. Anteroventrale Sporen der Mittel- und Hinterschienen schwarz. Flügel mit bräunlicher Trübung und gelblichbraunen Adern, 2 1/2mal so lang wie breit (21 : 8). Letzter Abschnitt der *m* dreimal so lang wie der vorletzte ( $m_3 : m_4 = 3 : 9,2$ ),  $t_a - t_p : t_p = 3 : 1,5$ . Letzter Abschnitt der *cu* ebenso lang wie  $t_a - t_p$ ,  $t_a$  hinter der Mündung des  $r_1$ . Schüppchen und Schwinger gelblich.

Abdomen dunkelgrau, grünlich schimmernd, ohne braune Querstreifen am Vorderrand der Tergite.

♀. — In sämtlichen wesentlichen Merkmalen mit dem Männchen übereinstimmend, unterscheidet sich bloß dadurch, daß die Backen breiter sind als beim Männchen, nämlich um die 1/2 der Augenhöhe und das Verhältnis  $m_3 : m_4$  nicht 1 : 3, sondern 1 : 4 ist.

Körperlänge (♂♀): 2,2—3,0 mm, Flügellänge (♂♀): 1,8—2,3 mm.

Holotypus (♂): »Mongolia: Südgobi aimak, Nojon nuruu, Grenzposten Ovot Chuural, 1500 m, Exp. DR. Z. KASZAB, 1967« (Nr. 829, 21. VI. 1967).

Paratypen: Suche ba a t o r a i m a k : Fluß Bajan gol, 85 km NO von Somon Dariganga, 1100 m, 8. VIII. 1965 (Nr. 377), 2 ♂. — Ch o v d a i m a k : 3 km N von Somon Uenč, im Tal des Flusses Uenč gol, 1450 m, 2.—3. VII. 1966 (Nr. 614), 2 ♂, 2 ♀; 10 km NW von Somon Uenč, 1480 m, 4. VII. 1966 (Nr. 625), 4 ♂, 1 ♀; Mongol Altaj Gebirge, ca 35 km N von Somon Uenč, 1750 m, 8. VII. 1966 (Nr. 646), 1 ♂, 10 ♀; Mongol Altaj Gebirge, Tal des Flusses Uenč gol, ca 44 km N von Somon Uenč, 1780 m, 8. VII. 1966 (Nr. 647), 2 ♂, 3 ♀. — S ü d g o b i a i m a k : Nojon nuruu Gebirge, Grenzposten Ovot Chuural, 1500 m, 21. VI. 1967 (Nr. 829), 7 ♂, 23 ♀ (Gen. Präp. ♂ und ♀). — 63 Exemplare.

Der Holotypus und die Paratypen werden in der Dipteren-Sammlung des Ungarischen Naturwissenschaftlichen Museums, Budapest, aufbewahrt.

*P. mongolica* sp. n. steht der *P. obscurior* (BECKER, 1907) am nächsten, die Unterscheidungsmerkmale der beiden Arten sind dem Bestimmungsschlüssel zu entnehmen.

B e m e r k u n g e n. Von den 6 Exemplaren der Art »*Tethina obscurior* n. sp.« BECKER konnten 4 von mir nachbestimmt werden. Aufgrund der Beschreibung von BECKER (1907: 308) nahm ich an, daß von den — aus der Mongolei nachgewiesenen — 2 neuen Arten, die eine, im nachfolgenden als *nigra* sp. n. beschriebene Art, mit der von BECKER aufgestellten *obscurior* identisch ist. Die Untersuchung der Typenexemplare (sie besaßen keine Bestimmungs- bzw. Typenbezeichnung, trotzdem handelt es sich aufgrund der Fundortsetikette zweifelsohne um die Exemplare der Typenserie) erbrachte den Nachweis, daß die Beschreibung BECKER's einerseits berichtigt werden muß, andererseits daß die weiter oben als *mongolica* sp. n. aufgestellte Art der *obscurior* nahe steht und nicht der *nigra* sp. n. CZERNY (1928: 2) und HENDEL (1934: 52—53), die die in Leningrad aufbewahrten Exemplare nicht gesehen hatten, betrachteten sie als Varietät bzw. Unterart von *cinerella* HALIDAY, 1839. Von den 4 zur Überprüfung zugesandten Exemplaren erwies sich eins der Art *mallochi* STURT. zugehörend (»Kurlyk, Baingol vost. Čajdam. ROBKOZLOV 16—24. V. 95«, 1 ♀). Von den übrigen drei Exemplaren wurden der Lectotypus und die Paralectotypen der Art *obscurior* festgelegt. Lectotypus ♂: »Orogyn

Syrtyň ju Nanyschanja Gobi ROBKozlov 3—20. VII. 95«. — Paralectotypen: Fundort wie beim Holotypus, 1 ♂, 1 ♀. Die Redescription von *obscurior* BECKER sowie die ausführlichen Beschreibung der nachstehend bekanntgegebenen neuen Art mit entsprechenden Abbildungen soll später im Rahmen einer Revisionsarbeit folgen.

#### 4. *Pelomyiella nigra* sp. n.

Ähnelte der vorausgehend ausführlich beschriebenen *mongolica* sp. n., so daß nachstehend nur die Unterschiede zwischen den beiden Arten angeführt werden.

##### *P. mongolica* sp. n.

1. Metatarsen, mindestens die der mittleren und hinteren Beine sowie das darauffolgende Glied gelblichbraun.
2. Ein Teil des schwarzen 3. Fühlergliedes immer gelb.
3. Letzter Abschnitt von *cu* eben so lang wie  $t_a - t_p$ .
4. Augen queroval.

##### *P. nigra* sp. n.

1. Beine mit sämtlichen Tarsengliedern schwarz.
2. 3. Fühlerglied immer einfarbig schwarz.
3. Letzter Abschnitt von *cu* auffallend länger als  $t_a - t_p$ .
4. Augen rund.

Körperlänge (♂♀): 2,1—2,8 mm, Flügellänge (♂♀): 1,6—2,1 mm.

Holotypus (♂): »Mongolia: Uvs aimak, S. Rand des Sees Örög nuur, 1500 m, Exp. DR. Z. KASZAB, 1968«, »Nr. 1035, 28. VI. 1968«.

Paratypen: Chövsgöl aimak: 60 km WNW von der Stadt Mörön, 1800 m, 19. VI. 1968 (Nr. 985), 1 ♀. — Uvs aimak: Südrand des Sees Örög nuur, 1500 m, 28. VI. 1968 (Nr. 1035), 1 ♀. — Bajan-Ölgij aimak: NO-Ecke des Sees Tolbo nuur, 2100 m, 1. VII. 1968 (Nr. 1050), 1 ♂. (Gen. Präp.), 4 ♀; ibid. (Nr. 1051), 1 ♀ Nachts bei Lampenlicht gesammelt. — 9 Exemplare.

Der Holotypus und die Paratypen werden in der Dipteren-Sammlung des Ungarischen Naturwissenschaftlichen Museums, Budapest, aufbewahrt.

5. *Rhinoessa czernyi* HENDEL, 1934. — Untersuchtes Material. Ostgobi aimak: 40 km NW von Chara Eireg, 1150 m, 30. VI. 1963 (Nr. 62), 1 ♀. — Chovd aimak: 10 km SSW von Somon Bulgan, 1200 m, 4.—5. VII. 1966 (Nr. 628), 1 ♀. — Südgobi aimak: SW-Rand des Salzsees Dund gol (am »alten Somon Burgban-tes«), 1300 m, 19. VI. 1967 (Nr. 819), 1 ♀. — 3 Exemplare.

Die Exemplare aus der Mongolei konnten mit den Typenexemplaren von HENDEL verglichen werden, wobei festgestellt wurde, daß sie in allen wesentlichen Merkmalen übereinstimmen. Es handelt sich um eine weitverbreitete Art, die von Spanien und der Nord- und Ostsee über Deutschland, Ungarn (bisher unveröffentlichte Angabe), Kleinasien bis Usbekistan bekannt war. Nun ist die Mongolei der östlichste Fundort.

### VERZEICHNIS DER PALÄARKTISCHEN TETHINIDEN-ARTEN

#### *Pelomyiella* HENDEL, 1934

HENDEL, 1934: Tijdschr. v. Ent., 77: 39

Typische Art: *Pelomyia hungarica* CZERNY, 1928 (orig. des.)

1. *cinerella* (HALIDAY, 1839): Ent. Mag., 4: 151 [*Opomyza* (*Leptomyza*)]

Verbreitung: Irland, England, Spanien (Kanarische Inseln), BRD, DDR, Mongolei, Tibet.

2. *hungarica* (CZERNY, 1928): Tethinidae, in: LINDNER, 5(2): 2—3 (*Pelomyia*)

Verbreitung: Ungarn.



3. **mallochi** (STURTEVANT, 1923): Amer. Mus. Nov., No. 76: 7 (*Pelomyia*).  
 = *angustifacies* (DE MEJERE, 1928): Tijdschr. Ent., 71: 76–79 (*Pelomyia*)  
 = *illota* (KUNTZE, 1897) (nec HALIDAY, 1839): Sitzb. Abh. naturw. Ges. Isis, Dresden, 1897: 19–20 (*Tethina*)  
 = *kuntzei* (CZERNY, 1928): Tethinidae, in: LINDNER, 5(2): 3 (*Pelomyia*)  
 Verbreitung: England, Nord- und Ostseeküsten, Österreich, Italien, Ungarn, Mongolei, Tibet, Nord-Amerika.
4. **mongolica** sp. n. Soós, 1978: Acta Zool. Hung., 24: 409–411  
 Verbreitung: Mongolei.
5. **nigra** sp. n. Soós, 1978: Acta Zool. Hung., 24: 411  
 Verbreitung: Mongolei.
6. **obscurior** (BECKER, 1907): Ann. Mus. Zool. Acad. Imp. Sci. St.-Petersbourg, 12: 308 (*Tethina*)  
 Verbreitung: Tibet.

#### **Tethina** HALIDAY, 1839

- HALIDAY, 1839: Ann. Mag. Nat. Hist., 2: 188  
 Typische Art: *Tethina illota* HALIDAY, 1839 (mon.)
7. **albissima** COLLIN, 1966: Boll. Mus. Civ. Venezia, 16: 23  
 Verbreitung: Italien.
  8. **albosetulosa** (STROBL, 1900): Wien. Ent. Ztg., 19(1): 7–8 (*Rhinoessa*)  
 = *albopsila* (MERCIER, 1925): Ann. Soc. Ent. Belg., 65: 179 (*Rhinoessa*)  
 = *griseola* (CZERNY, 1928) (nec VAN DER WULP, 1871): Tethinidae, in: LINDNER, 5(2): 5  
 = var. *beckeri* (STROBL, 1906): Mém. Soc. Esp. Hist. Nat., 3: 361 (*Rhinoessa*)  
 Verbreitung: Küsten des Mittelmeeres, der europäischen Atlantis, Nord- und Ostseeküsten.
  9. **diversa** COLLIN, 1966: Boll. Mus. Civ. Venezia, 16: 24–25  
 Verbreitung: Italien.
  10. **illota** HALIDAY, 1839: Ann. Mag. Nat. Hist., 2: 188  
 = *griseola* (VAN DER WULP, 1871): Tijdschr. Ent., 14: 198 (*Madiza*)  
 Verbreitung: Irland, England, Niederland, Belgien.
  11. **intermedia** COLLIN, 1966: Boll. Mus. Civ. Venezia, 16: 21–22  
 Verbreitung: Tunesien.
  12. **mixta** COLLIN, 1966: Boll. Mus. Civ. Venezia, 16: 24  
 Verbreitung: Frankreich, Italien.

#### **Rhinoessa** LOEW, 1862

- LOEW, 1862: Wien. Ent. Monatschr., 6(6): 175  
 Typische Art: *Rhinoëssa cinerea* LOEW, 1862 (mon.)
13. **alboguttata** STROBL, 1900: Wien. Ent. Ztg., 19(1): 6–7  
 Verbreitung: Spanien, Algerien.
  14. **cinerea** LOEW, 1862: Wien. Ent. Monatschr., 6(6): 175  
 Verbreitung: Küsten des Mittelmeeres, Schwarzes Meer (Bulgarien)
  15. **czernyi** HENDEL, 1934: Tijdschr. Ent., 77: 46  
 = *grisea* (CZERNY, 1928) (nec FALLÉN, 1823): Tethinidae, in: LINDNER, 5(2): 4–5 (*Tethina*)  
 Verbreitung: Spanien, Nord- und Ostseeküsten, DDR, Ungarn, Kleinasien, Transkaspien, Mongolei.
  16. **dubiosa** COLLIN, 1966: Boll. Mus. Civ. Venezia, 16: 30–31  
 Verbreitung: Italien.
  17. **flavigenis** HENDEL, 1934: Tijdschr. Ent., 77: 47–48  
 Verbreitung: Spanien.
  18. **grisea** (FALLÉN, 1823): Dipt. Suez. Agromyz., 7  
 = *latigenis* BECKER, 1907: Ztschr. syst. Hym. et Dipt., 7(5): 405  
 Verbreitung: Küsten des Mittelmeeres, Ins. Kreta, der europäischen Atlantis, Nord- und Ostseeküsten, Schwarzes Meer.
  19. **grossipes** BECKER, 1908: Mitt. Zool. Mus. Berlin, 4(1): 165  
 Verbreitung: Kanarische Inseln.

20. **heringi** HENDEL, 1934: Tijdschr. Ent., **77**: 49—50  
Verbreitung: Kanarische Inseln.
21. **incisuralis** (MACQUART, 1850): Dipt. exot., Suppl., **4**: 205 (*Chlorops*)  
= *pallipes* BECKER, 1907 (nec LOEW, 1865): Ztschr. syst. Hym. et Dipt., **7**(5): 405  
= *pictipes* BECKER, 1902: Mitt. Zool. Mus. Berlin, **2**(2): 185  
Verbreitung: Aegypten, Tunesien, Kanarische Inseln.
22. **longirostris** LOEW, 1865: Berl. Ent. Ztschr., **9**: 36—37  
Verbreitung: Italien (Sizilien), Spanien.
23. **marmorata** BECKER, 1908: Mitt. Zool. Mus. Berlin, **4**(1): 164—165  
Verbreitung: Kanarische Inseln.
24. **nigripes** (CZERNY, 1928): Tethinidae, in: LINDNER, **5**(2): 7 (*Tethina*)  
Verbreitung: Nord- und Ostseeküsten, DDR, Italien (Sizilien), Israel.
25. **pallipes** LOEW, 1865: Berl. Ent. Ztschr., **9**: 37—38  
Verbreitung: Griechische Inseln.
26. **penita** COLLIN, 1966: Boll. Mus. Civ. Venezia, **16**: 31—32  
Verbreitung: England.
27. **simplex** COLLIN, 1966: Boll. Mus. Civ. Venezia, **16**: 32  
Verbreitung: England.
28. **strobliana** MERCIER, 1923: Ann. Soc. Ent. Belg., **63**: 18—19  
= *longirostris* (CZERNY, 1928) (nec LOEW, 1865): Tethinidae, in: LINDNER, **5**(2): 6  
(*Tethina*)  
Verbreitung: Sizilien, Spanien, französische Atlantik-Küste, DDR, Polen, Ungarn.

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## ANOPLOCEPHALIDAE (CESTODA) PARASITES OF LEPORIDAE AND SCIURIDAE IN EUROPE

By

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The species *Andrya rhopalocephala* (RIEHM, 1881), *Mosgovoyia pectinata* (GOEZE, 1782), *Neoctenotaenia ctenoides* (RAILLIET, 1890) and *Ctenotaenia marmotae* (FRÖLICH, 1802) are described in detail. The systematico-taxonomic position of individual species is discussed and the genera *Ctenotaenia* RAILLIET, 1893, emend., and *Neoctenotaenia* TENORA, 1976, emend., are redescribed on the basis of an analysis of morphological characters.

The basic compendia describing the cestodes of the family Anoplocephalidae from the hosts studied by us were published by BAER (1927), ARNOLD (1938), LÓPEZ-NEYRA (1954), YAMAGUTI (1959) and SPASSKY (1951). The cestodes of this family recovered from Sciuridae and Leporidae in Europe were mostly identified after these authors (see, e.g., TENORA and BARUŠ 1957, ERHARDOVÁ 1958, BERTHOUD 1965, HÖRNING 1966—1968, RAUSCH 1976, and others). In the studies of our own material, we considered the papers of the above-mentioned authors and the classic study of STILES (1896). We have found many morphologico-anatomical peculiarities which are discussed in the present paper with regard to the present taxonomic status of cestodes of the family Anoplocephalidae.

**Material.** In our studies, we used the material collected by the workers of the Zoological Department of the Hungarian Natural History Museum, Budapest, the material from Czechoslovakia mentioned in the papers by TENORA and BARUŠ (1957) and by TENORA (1961), and a new material from Czechoslovakia collected by Ing. M. STANĚK. The material from Sciuridae was obtained by the courtesy of Prof. DR. HÖRNING (Switzerland) and DR. PFALLER (Austria).

### I. SYSTEMATICS AND TAXONOMY

#### 1. *Andrya rhopalocephala* (RIEHM, 1881) STILES, 1895 (Fig. 1 and Plate I)

**Material studied:** 35 specimens; host: *Lepus europaeus*; localities: Telki, Isaszeg, Hatvan, Vámosgyörk, Poroszló (Hungary).

**Description.** Strobila 600—800 mm long and 4.5—5.5 mm wide. Scolex unarmed, about 1.1—1.3 mm in diameter. Suckers 0.45—0.50 mm in diameter. Neck very short. Proglottids slightly wider than long. Genital pores



single, situated near posterior corner of proglottid. Testes (80 to 90 in number) situated mostly in aporal, partly also in dorsal part of proglottids and measuring 0.06—0.08 mm in diameter. Cirrus pouch 0.35—0.40 mm long and 0.12—0.20 mm wide. 0.12 mm long cirrus and internal seminal vesicle lying inside cirrus pouch. External seminal vesicle well developed, with prostate glands on its surface. In young proglottids, external seminal vesicle oval, in older ones gradually elongating. Prostate glands most developed in mature proglottids, but present also in gravid ones. Vas deferens relatively thin, running from external seminal vesicle. Vagina situated under cirrus pouch and passing to large seminal receptacle. Genital pores unilateral or irregularly alternating. Uterus reticulate already in earliest discernible stage of development and situated anteriorly to ovary. Eggs ( $0.056 \times 0.062$  mm) provided with pyriform apparatus.

**Notes.** Two species belonging to the genus *Andrya* RAILLIET, 1893, parasites of Leporidae, have been reported from Europe: *A. rhopalocephala* (RIEHM, 1881) and *A. cuniculi* (BLANCHARD, 1891). They are characterized by the presence of an external seminal vesicle provided with prostate glands (see STILES, 1896). An exception is the material illustrated by RAUSCH (1976). On p. 522 a detail of the genital ducts is given, where, in case of *A. rhopalocephala*, there is a distinct external seminal vesicle with glands on its surface. In case of *A. cuniculi*, the seminal vesicle is large, but the glands on its surface are lacking. In spite of this, RAUSCH (1976) states: "... that [it] neither possesses a pedunculate prostate gland as described by RIEHM (1881)".

We have observed that the external seminal vesicle is provided with glands whose function is not quite known, but this external seminal vesicle is termed prostate gland. Our observations are conformable to the data published by STILES (1896). It should be noted that this morphological character may be questionable in determining a taxon of generic rank.

As to the development of the uterus, we fully agree with RAUSCH (1976).

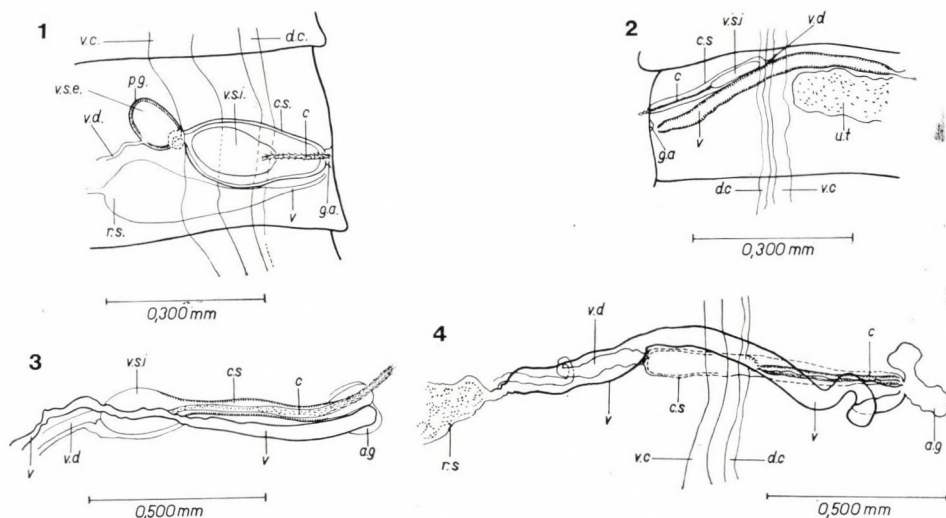
Individual authors recognize different criteria for the separation of the species *A. rhopalocephala* and *A. cuniculi* (compare e.g. STILES, 1896, BAER, 1927, SPASSKY, 1951). ERHARDOVÁ (1958) notes that even if the authors recognize the independence of both species there appear doubts about their validity. ERHARDOVÁ (1958) found both species in the same localities, but she observed that they vary much in the measurements and arrangement of body organs and that the same measurements of some organs may occur in both species which throws doubts on their independence. Since we do not have a sufficient comparative material from more localities and regions, we desist to express an opinion on this question.

## 2. *Mosgovoyia pectinata* (GOEZE, 1782) SPASSKY, 1951 (Figs. 2–4 and Plate II)

**Material studied:** 14 specimens; host: *Oryctolagus cuniculus*; localities: Znojmo and Bačov (Czechoslovakia), 10 specimens; host: *Lepus europaeus*; localities: Ísaszeg, Hort, Atkár, Derekegyház, Jászárokszállás (Hungary).

**Description.** Strobila 100 mm long and 10 mm wide, anterior portion usually lanceolate. Scolex relatively small, about 0.40 mm in diameter, provided with four suckers. Suckers 0.15 mm in diameter. Neck very short, segmentation beginning almost immediately back of head. Proglottids rapidly becoming distinct, always much wider than long. Mature proglottids up to seven times wider than long. Genital organs developing very early, already in the first proglottids behind scolex. They are paired and open in posterior half of

margin. Testes numerous (100—120 in specimens from Czechoslovakia and 110—135 in those from Hungary), situated in lower part of proglottids posterior to uterus, filling middle field and poral part from ovary to longitudinal canals. Cirrus pouch long (0.80 mm), always reaching excretory canal, sometimes slightly crossing dorsal excretory canal. Long cirrus with fine spines situated inside cirrus pouch. Vas deferens penetrating into pouch and widening mostly in one internal seminal vesicle. Typical external seminal vesicle not developed,



Figs. 1—4. 1 = *Andrya rhopalcephala* (RIEHM, 1881), details of the genital ducts. — 2 = *Mosgovoyia pectinata* (GOEZE, 1782), details of the genital ducts. — 3 = *Mosgovoyia pectinata* (GOEZE, 1782), details of the genital ducts in mature segments. — 4 = *Mosgovoyia pectinata* (GOEZE, 1782), details of the genital ducts in gravid segments. — Abbreviations: c. = cirrus, c.s. = cirrus sac, d.c. = dorsal longitudinal excretory canal, g.a. = genital atrium, p.g. = prostatic gland, r.s. = seminal receptacle, ut. = uterus, v. = vagina, v.c. = ventral longitudinal excretory canal, v.d. = vas deferens, v.s.e. = vesicula seminalis externa, v.s.i. = vesicula seminalis interna

cirrus pouch passing to vas deferens. In gravid segments, cirrus pouch with conspicuous glands in its middle part. Vagina very long, always crossing longitudinal canals and provided with small glands on inner side. It is situated posterior to cirrus pouch, gradually turning above it and running above vas deferens or in space of vas deferens, then passing to seminal receptacle. Uterus in lateral parts of proglottids situated always posterior to ducts of genital organs, not crossing longitudinal excretory canals. Ovary and vitelline gland situated in middle field, laterally. Young uterus in form of transverse tube, developing anterior and posterior sacculations. Eggs measuring 0.07—0.08 mm. Pyriform apparatus well developed.



**Notes.** The genus *Mosgovoyia* was erected by SPASSKY (1951) for some species excluded from the genus *Cittotaenia* RIEHM, 1881. It is characterized by the uterus which is not reticular, not crossing longitudinal excretory canals and by its lateral parts situated under the openings of the genital organs. Another important taxonomic character mentioned by SPASSKY (1951) is the branched excretory system.

The species composition of the genus *Mosgovoyia* has not been completely solved. For example, in our material the species *M. pectinata* possessed a cirrus with fine spines. According to SPASSKY (1951), however, this morphologico-anatomical character is typical of the species *M. viscaciae* SPASSKY, 1951, known only from rodents from South America.

There are also some confusion as regards the subspecies of *M. pectinata*. SPASSKY (1951), in agreement with ARNOLD (1938), MEGGITT (1924), JOHN (1926) and others (see ARNOLD, 1938 for references), assumes that there are two subspecies of *M. pectinata*, namely *M. pectinata pectinata* (GOEZE, 1782) and *M. pectinata americana* (DOUTHITT, 1915). However, this conception was refused already earlier by BAER (1927) and SPREHN (1932). Regardless of this, TENORA and BARUŠ (1957) described a subspecies *M. pectinata moravica* ssp. n. The subspecies differ only in the number of testes. Since we have no comparative material at our disposal, we cannot solve the problem of validity of all species and subspecies constituting the genus *Mosgovoyia* in this paper. However, our studies show that the taxonomy of this genus should be revised in the future.

Considering the data published by BEVERIDGE (1976), it is doubtful whether the branched excretory system is a criterion of generic value.

### 3. *Neoctenotaenia ctenoides* (RAILLIET, 1890) TENORA, 1976 (Fig. 5 and Plate III)

**Material studied:** 7 specimens, host: *Oryctolagus cuniculus*; localities: Moravské Budějovice, Libhošť, Hlinsko in Bohemia, Horákov, Pohořelice (Czechoslovakia). 20 specimens, host: *Oryctolagus cuniculus*; localities: Sopron, Zsámbék, Gödöllő, Szada, Isaszeg, Pécel, Kerepes, Dabas (Hungary).

**Description.** Strobila 400 mm long and 9—11 mm wide. Scolex (0.45 mm in diameter) provided with four suckers — 0.2 mm. Genital organs paired. Testes arranged in two independent groups situated under uterus on inner lateral sides of female genital organs, occasionally reaching even under these organs. Testes absent in middle field. Each group consisting of about 45 testes. Cirrus pouch short (0.20 mm), never reaching dorsal longitudinal excretory canal. Cirrus short, without spines. Internal seminal vesicle present in cirrus pouch. External seminal vesicle absent, replaced by tubular, looping vas deferens. Vagina long, situated under cirrus pouch, crossing longitudinal excretory canals and passing to seminal receptacle. Ovary and vitelline gland situated in middle field, laterally. Uterus situated above testes and developing similarly as in the genus *Mosgovoyia*. Openings of genital organs lying in lateral parts of proglottids. In contrast to *Mosgovoyia* species, uterus crossing longitudinal excretory canals. Eggs (0.08 mm) provided with pyriform apparatus.

**Notes.** The genus *Neoctenotaenia* was established by TENORA (1976) for some species excluded from the genus *Ctenotaenia* RAILLIET, 1893, sensu SPASSKY, 1951. When studying specimens of *N. ctenoides* (RAILLIET, 1890) — designated by TENORA (1976) as the type-species of the genus *Neoctenotaenia* —, we have observed some important morphological characters concerning the situation of the genital organs. For this reason, we consider it necessary to redescribe the genus *Neoctenotaenia* TENORA, 1976.

*Neoctenotaenia* TENORA, 1976, emend.

**D i a g n o s i s.** Anoplocephalinae, scolex provided with four suckers. Excretory system formed by two pairs of lateral stems joined with a stem on dorsal side. It may be branched in the last proglottid with uterus. Reproductive organs doubled. Cirrus pouch short, not crossing longitudinal excretory canals. Internal seminal vesicle present. Typical external seminal vesicle lacking, replaced by straight or coiled vas deferens. Vagina situated under cirrus pouch. Uterus in form of transverse tube in lateral parts of proglottids crossing longitudinal excretory canals and situated posterior to genital openings. Testes mostly situated in lower half of proglottids, forming either two groups or one field, sometimes poral to ovary. Ovary and vitelline gland situated in lateral part of middle field. Eggs with well developed pyriform apparatus. Adult specimens parasitize mammals of the order Lagomorpha, rarely also Rodentia.

Type species: *Neoctenotaenia ctenoides* (RAILLIET, 1890) TENORA, 1976.

The genus *Neoctenotaenia* includes the following species: *N. praecoquis* (STILES, 1895) TENORA, 1976, *N. variabilis* (STILES, 1895) TENORA, 1976.

The systematico-taxonomic position of *Neoctenotaenia wittei* (BAER et FAIN, 1955) TENORA, 1976, should be revised. With regard to its morphologico-anatomical characters, particularly the situation of testes poral to ovary, this species is more closely related to the species of the genus *Mosgovoyia* SPASSKY, 1951. It has not yet been ascertained whether the uterus crosses the longitudinal excretory canals.

**D i f f e r e n t i a l d i a g n o s i s.** The genus *Neoctenotaenia* is closely related to the genus *Mosgovoyia* SPASSKY, 1951, from which it differs morphologically in that its uterus crosses the longitudinal excretory canals and the cirrus pouch is short, not reaching the longitudinal excretory canals.

This genus differs from the genus *Ectopocephalum* RAUSCH et OHBAYASHI, 1974, in the position of testes and uterus. It should be noted that the genera *Mosgovoyia* and *Neoctenotaenia* are morphologically closely related and their hosts are mammals of the family Leporidae, whereas cestodes of the genus *Ectopocephalum* are parasites of Ochotonidae. All three genera belong to the same evolutionary line which is characterized by the situation of lateral branches of uterus under the openings of genital organs. They are probably derived from cestodes of the genus *Schizorchis* HANSEN, 1948, parasites of mammals of the family Ochotonidae.

The genera *Mosgovoyia*, *Neoctenotaenia* and *Ectopocephalum* are morphologically — testes position — related also to the genus *Phascolotaenia* BEVERIDGE, 1976, which includes cestodes parasitizing mammals of the family Vombatidae, Marsupialia in Australia.

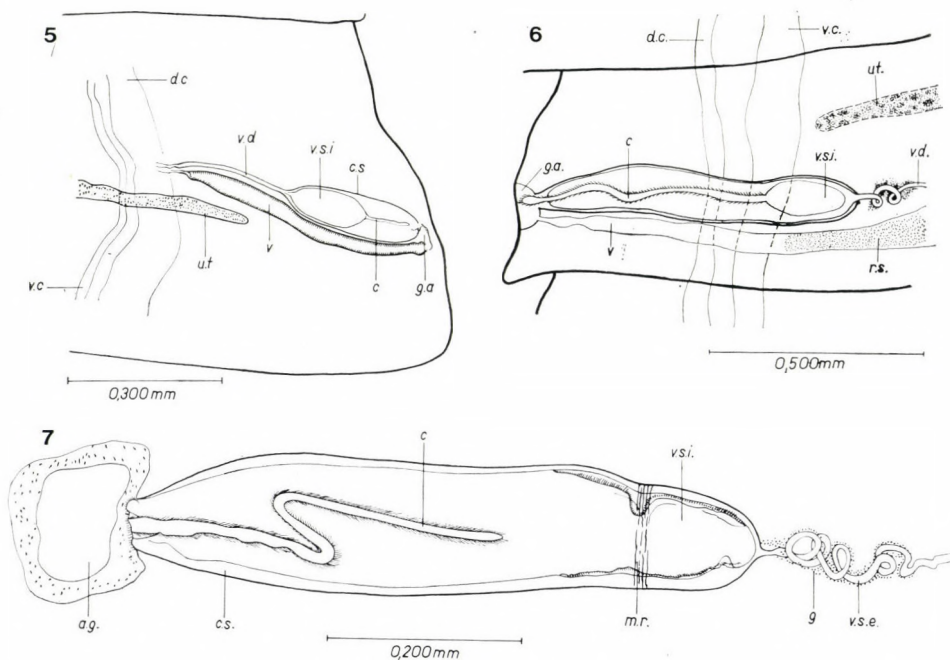


Like BEVERIDGE (1976), we assume that the genera *Mosgovoyia*, *Neoctenotaenia*, *Ectopocephalum* and *Phascolotaenia* cannot be distinguished by the type of the excretory system. According to BEVERIDGE (1976), this character is of no diagnostic value.

4. *Ctenotaenia marmotae* (FRÖLICH, 1802) RAILLIET, 1893  
(Figs. 6, 7 and Plate IV)

Material studied: 12 specimens, host: *Marmota marmota*; locality: Charmy, Dent de Lys, Switzerland. 100 specimens, host: *M. marmota*; locality: Langtal, Austria, several fragments; host: *M. marmota*; locality: High Tatras, Czechoslovakia.

Description. Strobila 100 mm long and 13 mm wide. Scolex 0.8 mm in diameter, provided with four 0.28 mm long suckers. Neck absent, segmentation beginning immediately back of head. Genital organs and genital pores double, genital atrium quite deep. Testes numerous (90), situated in middle field between ovaries, sometimes penetrating even under ovary and lacking in the part poral to ovary. Cirrus pouch large, 0.96 mm long, crossing longitudinal lateral excretory canals. Long cirrus with cuticular spines situated



Figs. 5–7. 5 = *Neoctenotaenia ctenoides* (RAILLIET, 1890), details of the genital ducts. — 6 = *Ctenotaenia marmotae* (FRÖLICH, 1802), details of the genital ducts. — 7 = *Ctenotaenia marmotae* (FRÖLICH, 1802), details of male genital ducts. — Abbreviations: g. = glands, m.r. = musculus retractor, ut. = uterus; other abbreviations see Figs. 1–4.

inside cirrus pouch. Internal seminal vesicle always well developed, provided with muscular retractor. External seminal vesicle formed from spirally coiled vas deferens filled with sperm. Surface of this part of genital organs provided with minute glands. Vagina short, not crossing longitudinal excretory canals and passing to conspicuous seminal receptacle. Young uterus in form of transverse tube forming proximal and distal blind pouches, situated near middle of proglottids and in lateral parts above openings of genital organs, not crossing lateral longitudinal excretory canals. Eggs (0.064 mm) with pyriform apparatus.

**Notes.** Our material conforms to the description of *C. marmotae* published by STILES, 1896. This author studied the specimens found by BLANCHARD (1891) in France. According to STILES (1896), BLANCHARD's material (1891) is identical in morphology with that of FRÖLICH (1802) recovered probably from *Marmota marmota* from the Swiss Alps.

The zoogeographical distribution of *C. marmotae* was studied by HÖRNING (1966—1968). In Europe, this cestode species parasitizes only *Marmota marmota*, whereas in the Asian part of the U.S.S.R. it was recorded in many species of the genus *Marmota* (see also SPASSKY and SHALAEVA, 1961).

Detailed studies of our material revealed some inaccuracies in the characteristics of the genus *Ctenotaenia* RAILLIET, 1893, sensu TENORA, 1976, concerning the situation of testes and uterus. In our opinion, the genus *Ctenotaenia* should be redescribed and its species composition revised.

#### *Ctenotaenia* RAILLIET, 1893, emend.

Anoplocephalinae. Scolex provided with four suckers. Strobila flat and wide. Excretory system simple, with dorsal and ventral canals bilaterally. Reproductive organs doubled. Cirrus pouch crossing lateral longitudinal excretory canals. Internal seminal vesicle present. External seminal vesicle present or absent. Testes numerous, situated in middle field between ovaries, sometimes penetrating posterior to ovary, poral to ovary absent. Vagina short, passing to large seminal receptacle. Uterus in form of transverse tube, developing anterior and posterior sacculations and filling gravid segments. Lateral parts of uterus situated anterior to openings of genital organs. Eggs with pyriform apparatus. Parasites of rodents.

Type-species: *Ctenotaenia marmotae* (FRÖLICH, 1802) RAILLIET, 1893.

The genus *Ctenotaenia* includes also *C. citelli* (KIRSCHENBLATT, 1939) SPASSKY, 1951, *C. asiatica* TOKOBAEV et ERKULOV, 1966. *C. avicola* (FUHRMANN, 1897), SPASSKY, 1951, *C. quadrata* (LINSTOW, 1904) SPASSKY, 1951 [Syn.: *Neoctenotaenia quadrata* (LINSTOW, 1904) TENORA, 1976].

**Differential diagnosis.** The genus *Ctenotaenia* differs from the genera *Mosgovoyia* SPASSKY, 1951, and *Neoctenotaenia* TENORA, 1976, emend., in the situation of uterus lateral parts lying above opening of genital organs. From the genus *Anoplocephaloides* BAER, 1923, emend. RAUSCH, 1976, it differs in the double genital apparatus.

They are all closely related to the species of *Anoplocephaloides* BAER, 1923, emend. RAUSCH, 1976, which are typical parasites of the family Sciuridae.



These are: *A. transversarius* (KRABBE, 1879) RAUSCH, 1976, *A. ryjikovi* (SPASSKY, 1951) RAUSCH, 1976, and *A. wigginsi* (RAUSCH, 1954) RAUSCH, 1976. These species of the genus *Anoplocephaloides* BAER, 1923, emend. RAUSCH, 1976, form a single evolutionary line together with the species of the genus *Ctenotaenia* RAILLIET, 1893, emend.

## II. NOTES ON SOME OTHER EUROPEAN SPECIES OF THE FAMILY ANOPLOCEPHALIDAE

### a) Parasites of Leporidae

1. *Anoplocephaloides wimerosus* (MONIEZ, 1880) RAUSCH, 1976. — This species is a typical element of West Europe. It has been found only in France and Switzerland, but no records are available from Central and East Europe. This is in agreement also with the compendium by GVOZDEV et al. (1970) who do not register this species among the helminths occurring in Lagomorpha in the U.S.S.R. More detailed data about *A. wimerosus* were published by STILES, 1896, and RAUSCH, 1976.

2. *Cittotaenia denticulata* (RUDOLPHI, 1804) STILES et HASSAL, 1896. — A detailed history of the systematico-taxonomical position, morphology and zoogeographical distribution of this cestode species was first published by STILES, 1896. As it follows from his papers, *C. denticulata* had been recorded only from West Europe until that time and the author himself had only material from France at his disposal. No other reliable data about the material and occurrence of this species in Europe have since been published and some of the data published by STILES (1896) have been misinterpreted. For example, SPASSKY (1951) in his compendium gives a figure of *Ctenotaenia marmotae* (p. 259, Fig. 2), but this is the figure of *Cittotaenia denticulata* drawn by STILES (1896). EDELÉNYI (1965) used the name *C. denticulata* for the species *M. pectinata*. In the U.S.S.R., *C. denticulata* has been reported only from the Crimea (GVOZDEV et al. 1970). The exact distribution of *C. denticulata* in Europe must be studied on the basis of recent, fresh material.

### b) Parasites of Sciuridae

1. *Anoplocephaloides transversarius* (KRABBE, 1879) RAUSCH, 1976. — The species was described from *Marmota* sp. in Turkestan (U.S.S.R.). The first very detailed description was published by STILES (1896). Other findings of this species from the U.S.S.R. — the Asian parts of Kirghizia and Kazakhstan — have been reported only since 1953, from various species of the genus *Marmota* (see HÖRNING, 1966—1968 for the list).

The occurrence of *A. transversarius* in *Marmota marmota* in Europe was first recorded by BAER (1927) and later by KREIS (1962). The literary data were summarized by HÖRNING (1966—1968) and HÖRNING and TENORA (1971).

It should be noted that there is no documentary material available about the occurrence of *A. transversarius* in Europe. According to reliable records, *A. transversarius* appears now to be an Asian element.

## III. KEY TO CESTODES OF THE FAMILY ANOPLOCEPHALIDAE — PARASITES OF MAMMALS OF THE FAMILIES LEPORIDAE AND SCIURIDAE IN EUROPE

- |   |   |
|---|---|
| 1 Uterus a transverse tube, developing anterior and posterior sacculations, not reticulate (Anoplocephalinae) .....   | 2 |
| — Uterus transverse, reticulate (Moniezinae) .....  | 5 |
| 2 Genital apparatus single. Cirrus pouch markedly large, measuring about 0.730 mm, testes situated mostly in aporal part of proglottids; parasites of Leporidae ..... |   |
| ..... <i>Anoplocephaloides wimerosus</i> (MONIEZ, 1880) RAUSCH, 1976  |   |

- Genital apparatus double ..... 3
- 3 Lateral parts of uterus situated anterior to genital openings; parasites of Sciuridae .....  
..... **Ctenotaenia marmotae** (FRÖLICH, 1802) RAILLIET, 1893
- Lateral parts of uterus situated posterior to genital openings ..... 4
- 4 Lateral parts of uterus not crossing longitudinal dorsal and ventral excretory canals, testes in one group on lower side of proglottids, reaching even to parts poral to ovary; parasites of Leporidae ..... **Mosgovoyia pectinata** (GOEZE, 1782) SPASSKY, 1951
- Lateral parts of uterus crossing longitudinal dorsal and ventral excretory canals, testes in two groups, medial part of proglottids without testes, testes lacking poral to ovary; parasites of Leporidae ..... **Neoctenotaenia ctenoides** (RAILLIET, 1890), TENORA, 1976
- 5 Genital apparatus single, external seminal vesicle well developed, with prostatic glands on surface; parasites of Leporidae ..... **Andrya rhopalcephala** (RIEHM, 1881) STILES, 1895
- Genital apparatus double, testes filling middle field and reaching even to side dorsal to ovary, prostatic glands developed; parasites of Leporidae .....  
..... **Cittotaenia denticulata** (RUDOPHI, 1804) STILES et HASSAL, 1896

**Notes.** With regard to the above-mentioned facts and to the most recent literary data, we submit correcting notes to the key to identify genera of the family Anoplocephalidae, prepared by TENORA (1976):

- Genus *Bertiella* STILES et HASSAL, 1902: testes in single band or 2 groups lying anterior to uterus (see BEVERIDGE, 1976).
- Synonyms of the genus *Progamotaenia* NYBELIN, 1917, are the genera *Fuhrmannodes* STRAND, 1942, and *Wallabicestus* SCHMIDT, 1975 (see BEVERIDGE, 1976).
- Genus *Ctenotaenia* RAILLIET, 1893: testes situated in middle field, uterus in lateral parts, situated anterior to genital openings not crossing longitudinal excretory canals (see data in our paper).
- Genus *Neoctenotaenia* TENORA, 1976: testes situated under uterus, uterus in lateral parts crossing longitudinal excretory canals (situated posterior to genital openings).
- *Aprostatandrya* (*Aprostatandrya*) SPASSKY, 1951, is a synonym of *Paranoplocephala* LÜHE, 1910, emend. RAUSCH, 1976.
- *Paranoplocephala* LÜHE, 1910, sensu SPASSKY, 1951, pro parte, is a synonym of *Anoplocephaloides* BAER, 1923, emend. RAUSCH, 1976.
- Genus *Ectopocephalum* RAUSCH et OHBAYASHI, 1974, belongs to the subfamily Anoplocephalinae BLANCHARD, 1891.
- Genus *Phascolotaenia* BEVERIDGE, 1976, belongs to the subfamily Anoplocephalinae BLANCHARD, 1891.
- Genus *Schizorchodes* BIENEK et GRUNDMANN, 1973, belongs to the subfamily Linstowiinae sensu SPASSKY, 1949.
- Species *Schizorchis esarsi* LOVEKAR, SETH, DESHMUKH, 1972, belongs to some of the genera of the family Linstowiidae sensu SPASSKY, 1949, and not to the genus *Schizorchis* HANSEN, 1948. Moreover, the genus *Schizorchis* belongs to the genera of the subfamily Anoplocephalinae which possess a branched excretory apparatus.
- Genus *Anoplocephaloides* BAER, 1923, emend. RAUSCH, 1976, possesses numerous testes, usually in poral half of segment (see RAUSCH, 1976).
- Genus *Aprostatandrya* (*Sudarikovina*) SPASSKY, 1951, is a synonym of *Sudarikovina* (SPASSKY, 1951) HUNKELER, 1972, emend.

All these facts should be taken into consideration while preparing a new key to the identification of cestodes of the family Anoplocephalidae CHOŁODKOWSKY, 1902, in the future.

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slovakia. It began during the visit of E. MURAI at the Department of Zoology, University of Agriculture, Brno, in 1977, and was finished in the same year, during the visit of Assoc. Prof. F. TENORA at the Zoological Department of the Hungarian Natural History Museum, Budapest. Our thanks are due to both these institutions for their understanding and financial support.

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### Explanation of the plates

#### Plate I. *Andrya rhopalocephala* (RIEHL, 1881)

Fig. 1. Mature segments. — Fig. 2. Part of mature segments, detail. — Fig. 3. Gravid segments, detail. — Fig. 4. Part of mature segments. — Fig. 5. Part of gravid segment, detail. — Fig. 6. Gravid segments. — Fig. 7. Part of gravid segments, longitudinal section. — Fig. 8. Lateral part of mature segments, longitudinal section

#### Plate II. *Mosgovoyia pectinata* (GOEZE, 1782)

Fig. 1. Mature segments. — Fig. 2. Part of mature segments, detail. — Fig. 3. Lateral part of mature segments. — Fig. 4. Part of pregravid segments. — Fig. 5. Gravid segments. — Fig. 6. Premature and mature segments in a very young cestode specimen, only 1 genital apparatus

#### Plate III. *Neoctenotaenia ctenoides* (RAILLIET, 1890)

Fig. 1. Part of mature segments. — Fig. 2. Part of premature segments. — Fig. 3. Female genital organs, detail. — Fig. 4. Part of pregravid segments. — Fig. 5. Part of pregravid segments, part of longitudinal section. — Fig. 6. Part of mature segments, longitudinal section. — Fig. 7. Part of gravid segment, transversal section. — Fig. 8. Part of gravid segment, transversal section, ventral and dorsal excretory canal, detail. — Fig. 9. Part of mature segment, transversal section

#### Plate IV. *Ctenotaenia marmotae* (FRÖLICH, 1802)

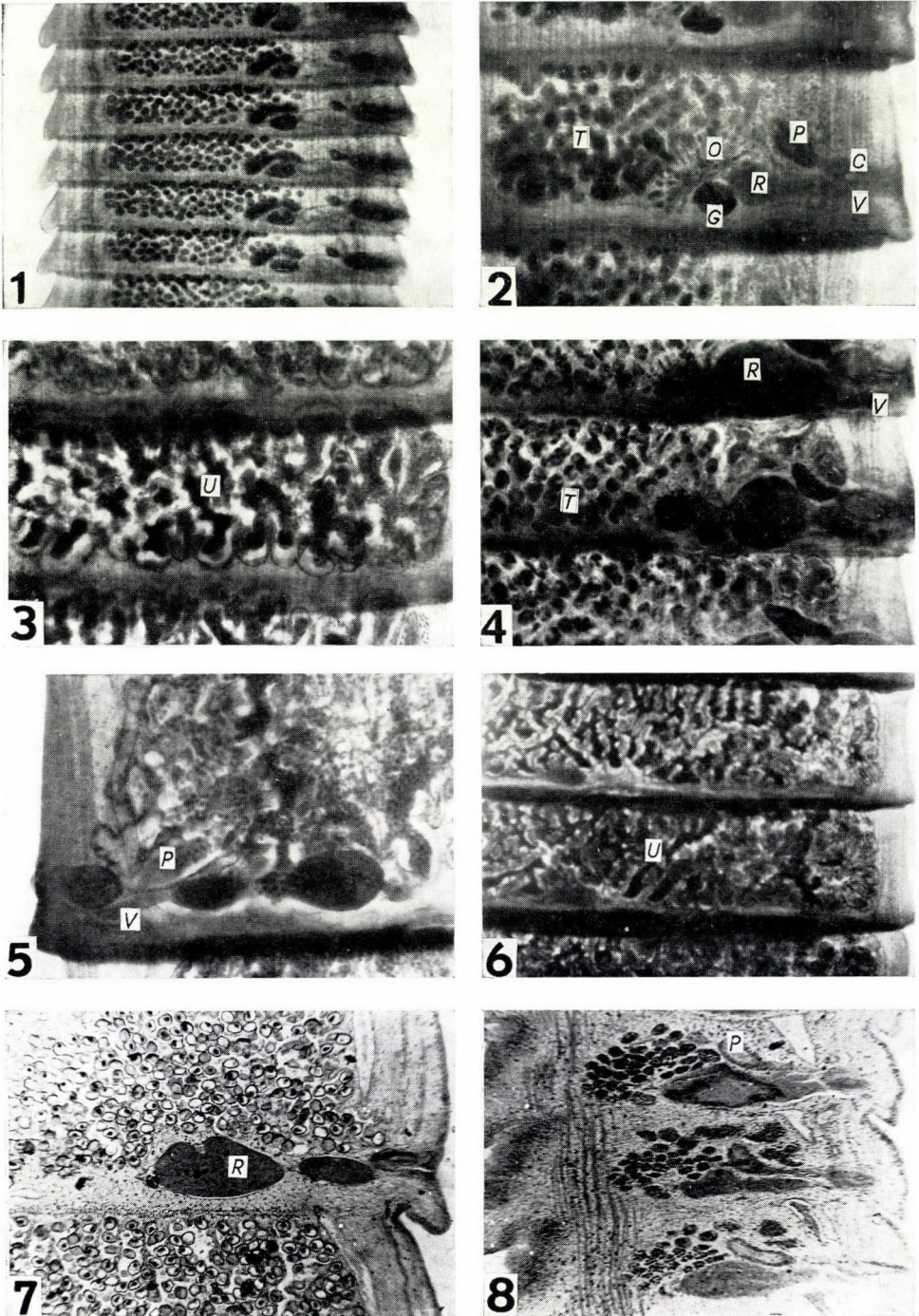
Fig. 1. Part of gravid segments, longitudinal section, detail. — Fig. 2. Part of mature segments. — Fig. 3. Lateral part of mature segments. — Fig. 4. Median part of mature segments. — Fig. 5. Lateral part of gravid segments. — Fig. 6. Lateral part of pregravid segments. — Fig. 7. Part of gravid segments. — Fig. 8. Eggs. — Fig. 9. Cirrus, detail

#### Abbreviations in Plates I.—IV.

C = cirrus sac, D = genital ducts, DE = dorsal longitudinal excretory canal, E = longitudinal excretory canals, F = female genital organ, G = vitellogene gland, O = ovary, P = vesicula seminalis externa with prostatic glands, R = seminal receptacle, T = testes, U = uterus, V = vagina, VE = ventral longitudinal excretory canal

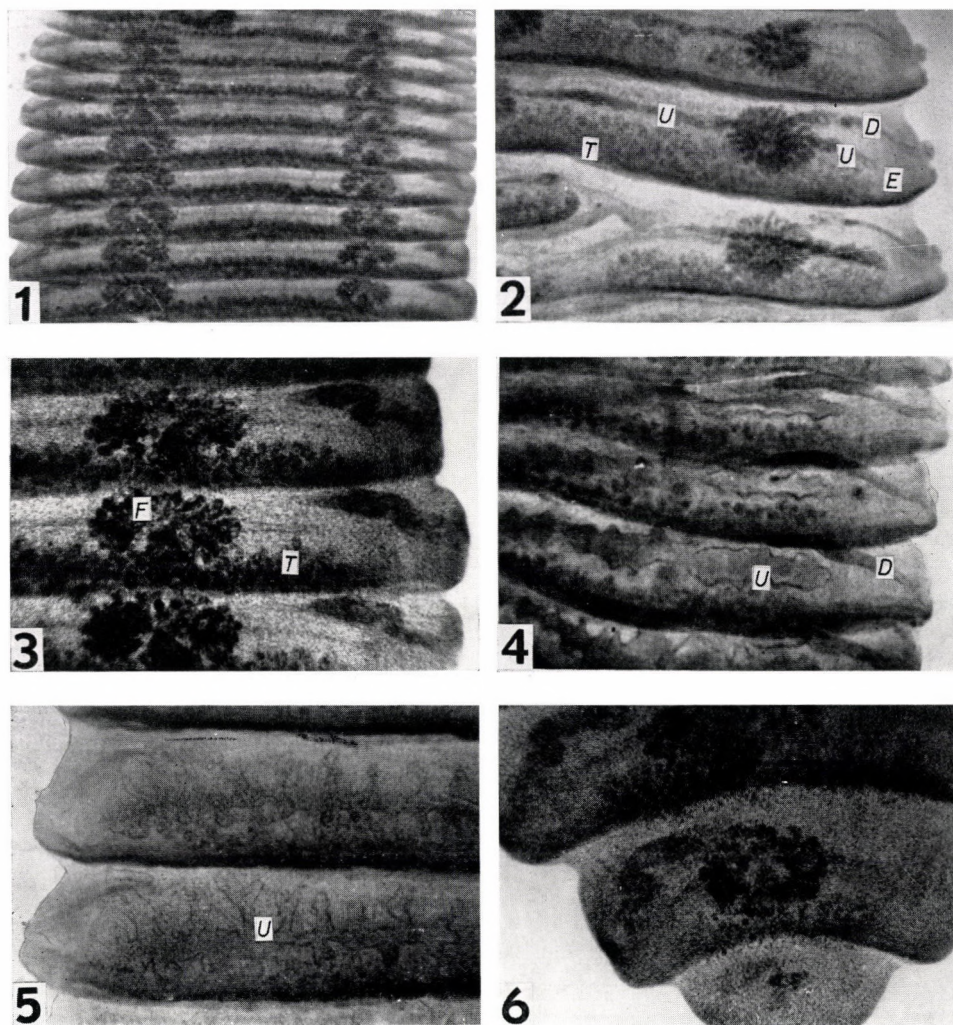


Plate I



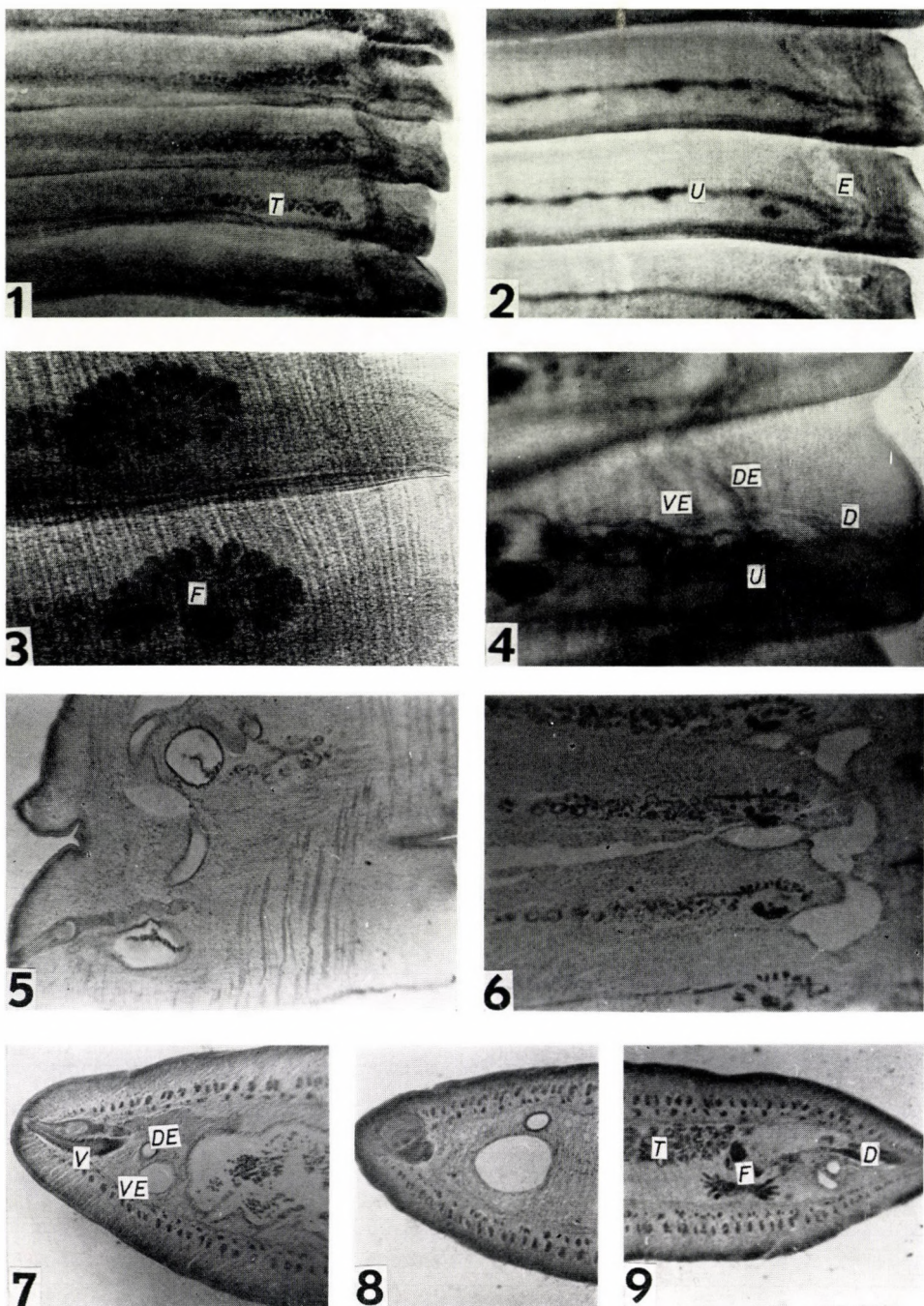


## Plate II



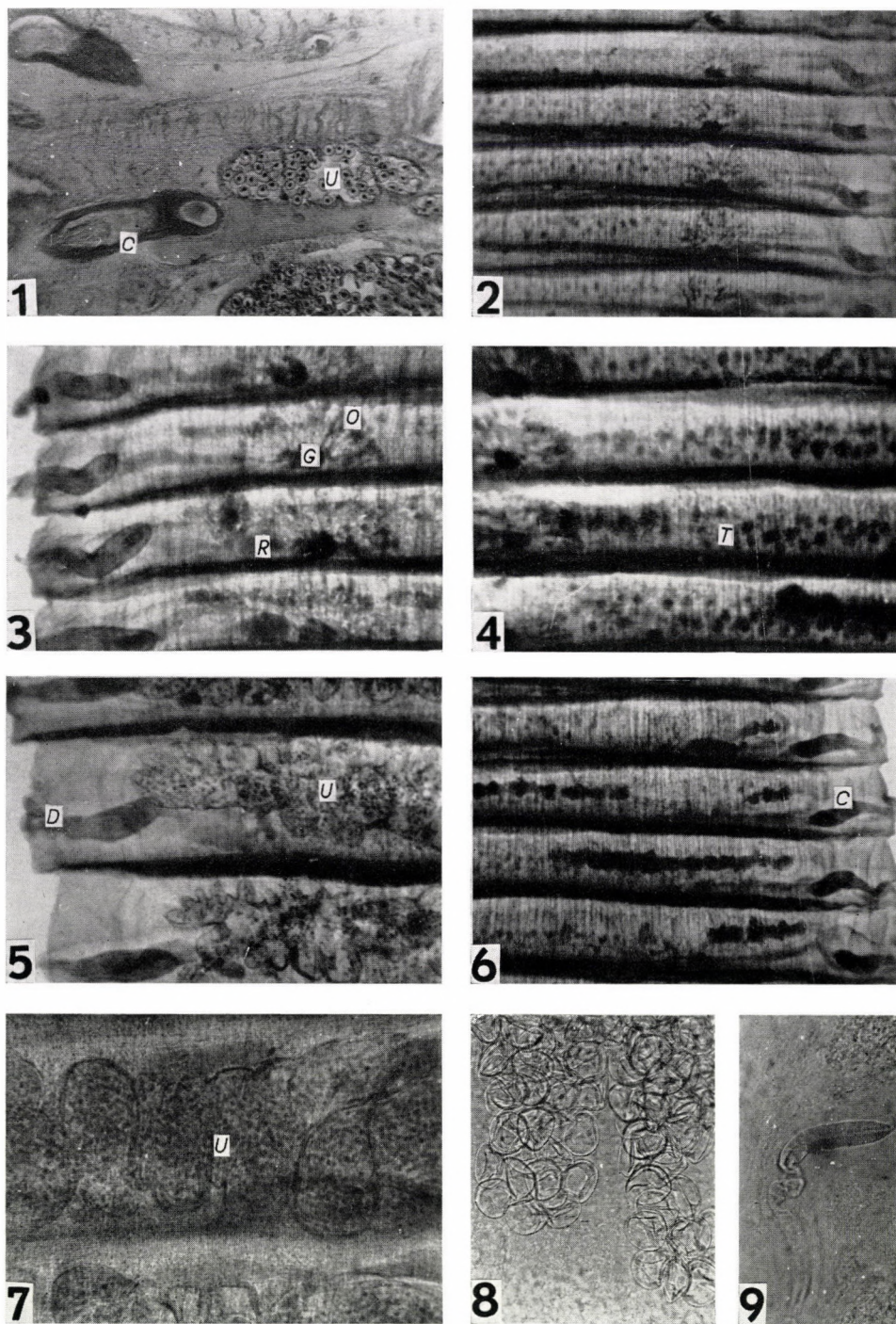


## Plate III





## Plate IV







INVESTIGATIONS IN THE "EUPITHECIA  
SCALPTATA-SYRIACATA" GROUP  
(LEPIDOPTERA: GEOMETRIDAE)\*

By

A. M. VOJNITS

(Received 23 November, 1977)

*Eupithecia saueri* sp. n. occurs in Armenia, Daghestan and Anatolia; *E. eberti* sp. n. in Iran, and *E. falkneri* sp. n. in Algeria. Studied are: *E. separata subpulchrata* ALPH., stat. et comb. n.; *E. separata conviva* DIETZE, stat. et comb. n.; *E. gluptata* DIETZE, stat. n.

The *Eupithecia* species which have been relegated in the "traditional" PROUT system (in SEITZ: 1914, 1939) between *Eupithecia centaureata* DEN. et SCHIFF. and *E. gratiosata* HS. can, according to their external morphology and genitalic configuration, be divided into two subgroups. In one of these groups — let its type be *E. syriacata* STGR. — the fore wings are elongated but apically rounded, their colour brown, yellowish brown or reddish brown. A well-known species belonging here is *E. gueneata* MILL. The male genitalia are characterized by a stout, angulate valva, the very short aedoeagus, and the hardly incised and squat sternit VIII; the bursa copulatrix displays, besides the smaller to larger chitinous spines, also chitinous lamellae. In the other group — let its type be *E. scalptata* CHRIST., — the elongated wings are also apically acute, their colour "cooler", frequently of a white or whitish to silvery tinge, the pattern elements more sharply defined, the transverse stripes narrower. In the male genitalia, the valva is more elongated, the aedoeagus longer, sternite VIII long, tapering, incised; the bursa copulatrix harbours only chitinous spines.

The species range mainly in South Europe, North Africa, Asia Minor, the Caucasus region, in Soviet Central Asia, the Near and Middle East. Their study is hopeless if based merely on geographical considerations (e.g. investigations delimited only to Asia Minor, Soviet Central Asia, Iran, etc.).

The species in question constitute one of the most beautiful and varying group of the enormous genus *Eupithecia* CURT. There is no doubt that many new species await discovery, nor that the populations, living in geographical circumstances markedly differing from one another, are more apt, as related to the other *Eupithecia* species, to form distinct species or subspecies.

\* Studies on Palaearctic *Eupithecia*-species IX.



***Eupithecia saueri* sp. n.**

**Diagnosis.** Average alar expanse of fore wings 21 mm, extreme values 17.5–23 mm. Wings, especially fore wings elongated, but apex slightly rounded, termen convexely and slightly arcuate. Basic colour of fore wing yellowish brown. Basal field (immediately at base) greyish, then lighter and subsequently more brownish. Ante- and postmedian stripes wide, yellow, multiply angulate, medially divided by a narrow brown line. Median field largely marmorately grey, with an obscure yellow spot near dorsum and a marked one medially. Discal spot merging into grey pattern. Outer half of terminal field and apical field proper greyish, with an occasionally interrupted white submarginal line decurrent between yellowish brown inner and greyish outer parts of terminal field. Termen defined by a sharp, narrow white line. Hind wing greyish to yellowish grey, along margin fuscous, with several sinuous grey or whitish lines; discal spot hardly discernible. Marginal line white. Underside of wings pale yellow to reddish brown, pattern elements well discernible, including also discal spots. Cilia moderately long, shiny grey, with yellowish stripes.

**Genitalia.** ♂: Valva short, wide, angulate, margins straight, dorsum angulate nearly medially. Vinculum wide. Uncus stout, medially attenuating, laterally wide, biapicate. Aedoeagus very short, thick, with 3 larger and 2 smaller characteristically shaped chitinous formations, occasionally — when superimposed on one another — appearing as if coalescent. Sternite VIII with a wide base, terminally attenuating and slightly incised (Fig. 1). ♀: Bursa copulatrix nearly spherical, its walls heavily sclerotized, with minute spines arranged in numerous larger, the larger spines in some smaller, fields; medially with a large, arcuate and ramifying chitinous plate bearing numerous robust

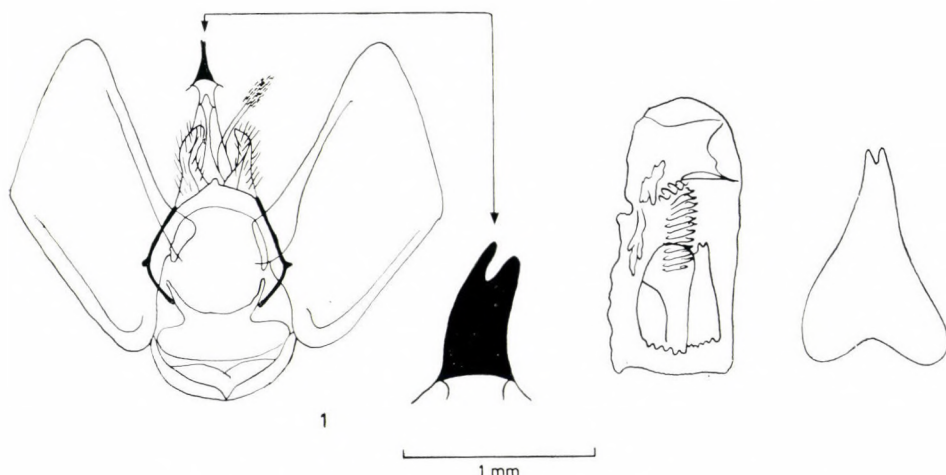


Fig. 1. Male genitalia and sternite VIII of *Eupithecia saueri* sp. n.

and stout chitinous spines. Apophyses anteriores thin and short, posteriores also thin and medium long. Papillae anales small and rounded (Fig. 2).

**Biology.** First stages and foodplant unknown. The known specimens were collected in June and July.

**Distribution.** Ranging in Soviet Armenia, Daghestan and Anatolia. Locus typicus: Yerevan (Soviet Armenia).

**Specific differences.** The new species stands nearest to *Eupithecia syriacata* Stgr., 1879. According to STAUDINGER (cited by PROUT, in: SEITZ, 1914), the species flies in the spring, known mainly from the Near East (Beirut, environs of Jerusalem), but found also in the Southern Taurus. The specimens I studied (A. Koenig Museum, Bonn: 8 specimens; Hungarian Natural History Museum: 4 specimens) had also been collected in May, originating from Akbes and Yüksek Dag and labelled "Syria". On the other hand, the new species was taken mostly in the area of the Soviet Union, in Daghestan and Armenia, but I have data also from Anatolia. The flight period is much later, in June and July. The new species has a slightly more acute apex of the fore wing, the basic colour considerably lighter and more vivid (see description), in contrast to the fuscous and more mat colour of *syriacata*; the hind

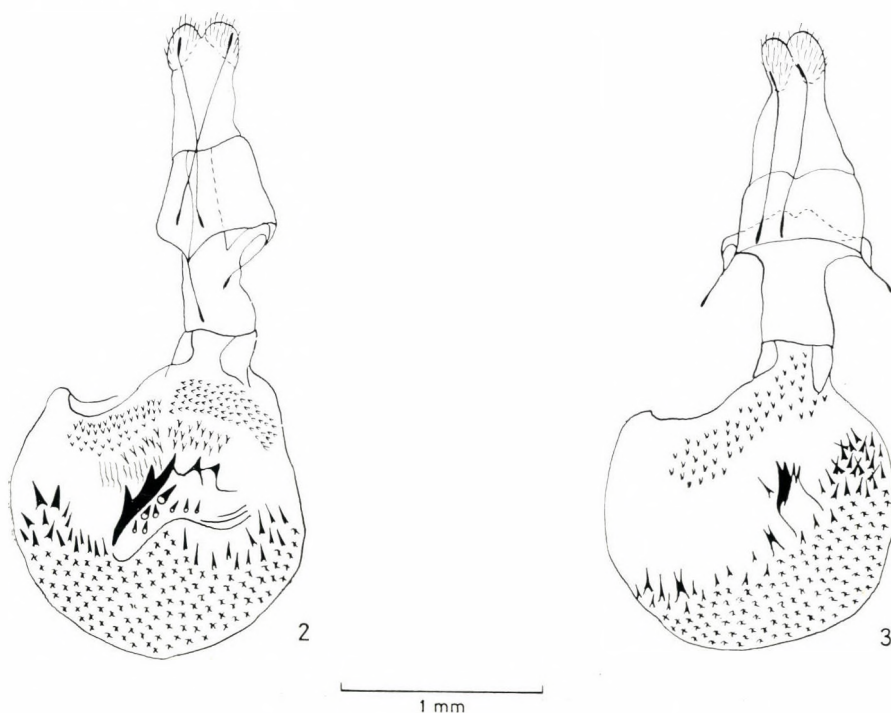


Fig. 2. Female genitalia of *Eupithecia saueri* sp. n.  
Fig. 3. Female genitalia of *Eupithecia syriacata* Stgr.



wing and the wide median field of *syriacata* are especially dark (the median field of the fore wing of *syriacata* is considerably wider than that of the new species). Despite the highly convincing differences in external morphological features, the configuration of the male genitalia is rather similar in both species, it is the shape of sternite VIII which is rather different (Fig. 4). In the rather similar female genitalia, the spinosity of the bursa copulatrix is weaker in

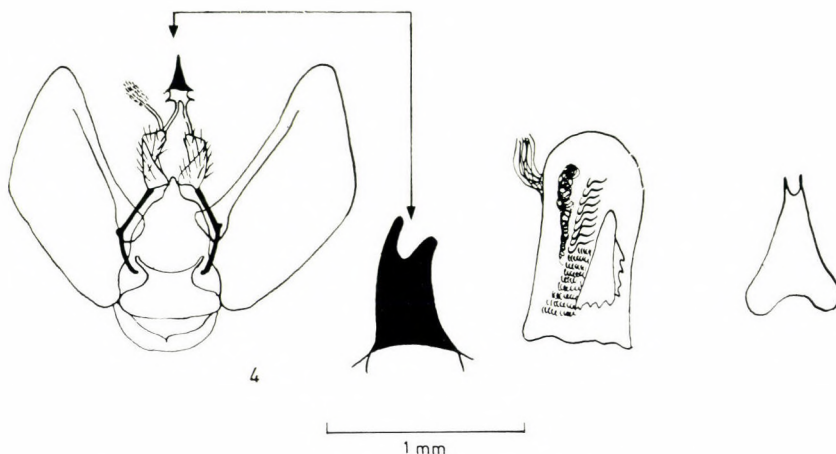


Fig. 4. Male genitalia and sternite VIII of *Eupithecia syriacata* STGR.

*syriacata* and the chitinous plate is also smaller (Fig. 3). It should be noted that in most collections the specimens representing the new species are treated as *Eupithecia subpulchrata* ALPH., or *E. separata* STGR., maybe because of the wing form slightly differing from *syriacata*, and of the strikingly different coloration and pattern. However, the structure of the genitalia relegates the new species in the immediate vicinity of *E. syriacata* STGR.

Holotype ♂: "Russ Armen Erivan 27. VI. 1934 M. RJABOV". Paratypes: idem, 14. VI., 16. VI., 24. VI. 1934, 2 ♂♂, 1 ♀; Daghestan, 14. VII. 1926, leg. M. RJABOV, 1 ♀; Ordubad, 4. VII. 1934, leg. M. RJABOV, 2 ♂♂; Yerevan, 13. VI. 1934, leg. M. RJABOV, 1 ♂; Araks, Armenia, 7. VII. 1931, leg. M. RJABOV, 1 ♀; Asia Minor, Anatolia, Aksehir Sultan Dag, 1500—1700 m, 1—15. VII. 1934, coll. E. PFEIFFER, 1 ♂. Holotype deposited in the Collection of Lepidoptera, Zoologisches Forschungsinstitut und Museum A. Koenig, Bonn, paratypes in the same institute and in the Hungarian Natural History Museum, Budapest.

Slides. *E. syriacata*: Nos. 753 (♂); 754, 1175, 11.340, 11.344, 11.391 (♀♀); *saueri* sp. n.: 755, 1174, 10.512, 10.514, 10.515, 11.392 (♂♂); 751, 1134, 10.513 (♀♀), gen. prep. Á. MÉSZÁR and A. VOJNITS.

I respectfully dedicate the new species to Professor DR. E. F. G. SAUER who, at the time of my research work as a grantee of the Humboldt stipend, was Director of the Zoologisches Forschungsinstitut und Museum A. Koenig, Bonn, and of extensive understanding and help in all my endeavours.

**Eupithecia separata subpulchrata** ALPHÉRAKY, 1882, *stat. et comb. n.* — *E. s. subpulchrata* ALPH., differs from *E. separata* STGR., 1879, in the followings: a small species, its alar expanse merely 16–17 mm, resembling in coloration and pattern *E. saueri* sp. n., insofar as it is a vivid yellowish brown, and the median field is sharply projecting. *E. separata* is larger, lighter in colour, with white scales irrorating in many places the veins of the fore wings. On the basis of the configuration of the genitalia, both forms are equally removed from *E. gueneata* MILL., and *E. syriacata* STGR., while they rather agree with each other. In my opinion, we are

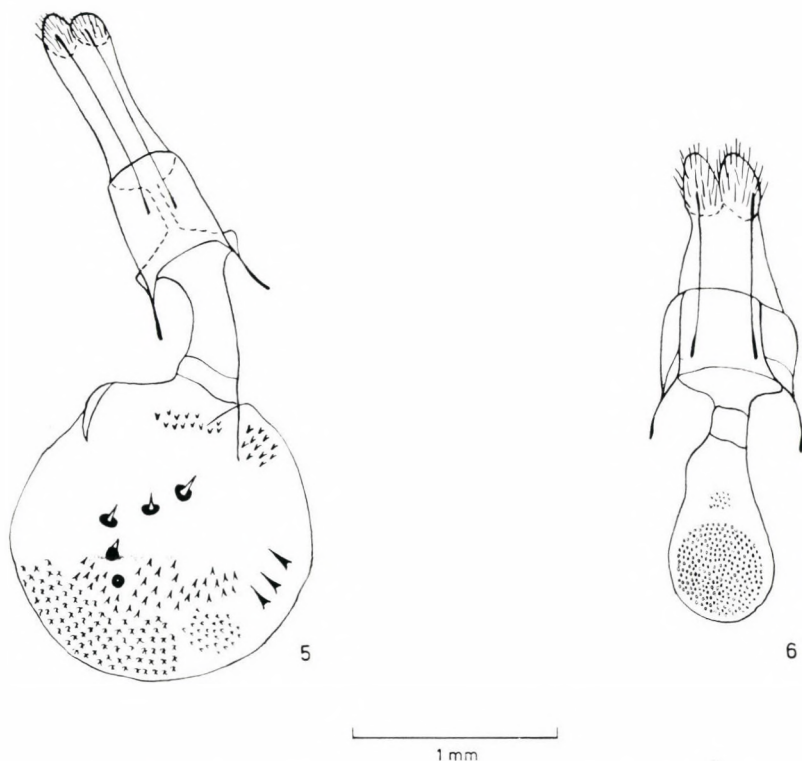


Fig. 5. Female genitalia of *Eupithecia gluptata* DIETZE

Fig. 6. Female genitalia of *Eupithecia falkneri* sp. n.

confronted with geographical subspecies; the identification of specimens representing "*separata*" and "*subpulchrata*", originating from the same locality, is at least questionable.

Slides. *E. separata*: Nos. 1136 (♂); 750, 752 (♀♀); *E. subpulchrata*: Nos. 577, 11.445 (♂♂); 578 (♀), gen. prep. A. VOJNITS.

**Eupithecia separata conviva** DIETZE, 1903, *stat. et comb. n.* — In external morphology highly resembling the nominate subspecies; but it is slightly bigger, and with a whitish stripe in the median field. Concerning the configuration of the genitalia, it rather agrees with the nominate subspecies. In my opinion, *conviva* DIETZE is a geographical subspecies of *E. separata* STGR.

Slide: No. 11.444 (♀), gen. prep. A. VOJNITS.

**Eupithecia gluptata** DIETZE, 1903, *stat. n.* — A taxon described as a variety of *E. scalptata* CHRIST; DIETZE (1903) analysed in detail the external morphological features. On the basis



of the female holotype\* I studied, especially as regards the structure of the genitalia (Fig. 5), the form represents a distinct species, differing from *E. scalptata* CHRIST.

Slides. *E. scalptata*: 748, 749, 1170, 1172, 1173, 11.343 (♂♂); 715 (♀); *gluptata*: 1180 (♀), gen. prep. A. VOJNITS.

### ***Eupithecia falkneri* sp. n.**

**D i a g n o s i s.** Alar expanse of the single known female specimen 20.5 mm. Fore wing elongated, narrow, apex obtuse. Hind wing relatively wide. Basic colour of basal and terminal fields brown, that of median field yellow. Antemedian consisting of three distinct brown lines, multiply angulate, postmedian wide, composed of brownish yellow stripes, slightly sinuous. Submarginal stripe wide, yellowish white, crenellated. Hind wing yellowish white, shiny, terminally with greyish oblique stripes. Underside of wings yellow, pattern yellowish brown, discal spots distinct (indiscernible on upperside of wings). Cilia medium long, striated brown and yellow, shiny.

**G e n i t a l i a.** ♀: Bursa copulatrix very small, elongated, its portion padded with chitinous spines spherical. Anterior and posterior apophyses thin and medium long. Papillae anales shaped like a grain of rice (Fig. 6). — ♂ Unknown.

**B i o l o g y.** First stages and foodplant unknown. The holotype has been collected in September.

**S p e c i f i c d i f f e r e n c e s.** The peculiar coloration and pattern of the fore wings — especially as regards the conspicuously differing yellow hue of the median field — distinguish the new species from the allied taxa. The female genitalia are also characteristic: the small bursa copulatrix as related to the size of the animal.

**D i s t r i b u t i o n.** Found in North Africa. Locus typicus: Lambése, Algiers.

Holotype ♀: "Algérie Lambése Septembre 1919 H. POWELL" "Gen. prep. 1138 ♀ det. VOJNITS A.". Holotype deposited in the Hungarian Natural History Museum, Budapest. Slide: No. 1138 (♀), gen. prep. A. VOJNITS.

I dedicate the new species to Mr. H. FALKNER, Karlsruhe, in recognition of his endeavours made in the study of the *Eupithecias*.

### ***Eupithecia eberti* sp. n.**

**D i a g n o s i s.** Alar expanse of the single known male specimen: 18 mm. Wings narrow and elongated, apex of fore wing acute, termen strikingly (convexely) arcuate. Basic colour of wings ochreous yellow, irrorated black and

\* The label data of the type-specimen preserved in the Zoological Museum of the Humboldt University Berlin, are: "*gluptata* Type Aschabad K. DIETZE" "677".

white. Ante- and postmedians white, describing a sharp curve near costa. Median field with fuscous spots; basal, apical and tornal fields also slightly similar. Terminal field with a white submarginal line. Hind wing with a greyish tinge and numerous sinuous transverse lines, terminal field slightly darker. Underside of wings pale yellowish white, pattern elements pale brown. Cilia short, yellowish brown, shiny.

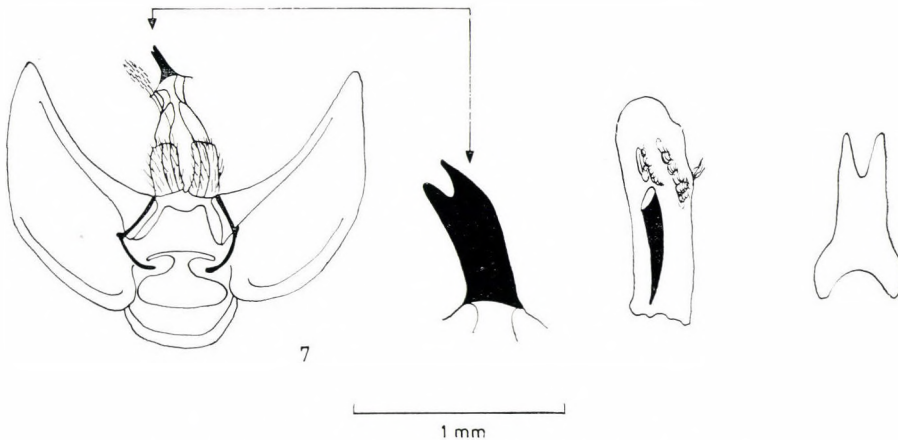


Fig. 7. Male genitalia and sternite VIII of *Eupithecia eberti* sp. n.

**Genitalia.** ♂: Valva short, its margins arcuate, apically acute, in the whole shaped like an orange slice. Vinculum wide and rounded. Uncus biapical, laterally wide. Aedoeagus medium long, cylindrical, with a robust, dentiform, and two irregularly shaped chitinous formations. Sternite VIII basally wide, only slightly attenuating, its incision sharp but not exceeding one-quarter length of sternite (Fig. 7). — ♀: Unknown.

**Biology.** First stages and foodplant unknown. The single known specimen was collected in the middle of summer.

**Specific differences.** The new species, principally characterized by the strikingly sinuous ante- and postmedian lines as well as the elongated and concurrently also extremely narrow wings, is only provisionally placed along the species discussed above. There is the possibility that after a better knowledge of the Iranian, and of the entire Near and Middle East, fauna the grouping will undergo some changes.

**Distribution.** Found in Iran. Locus typicus: Kuh i Mirabi, North-East Iran.

Holotype ♂: "Nordost-Iran Kuh i Mirabi Geröllzone 2200 m Juli-Anfg. Aug. Exp. Wernicke" "Gen. prep. No. 11.342 ♂ DR. A. VOJNITS Budapest TTM". Holotype deposited in the Hungarian Natural History Museum, Budapest.



Slide: No. 11.342 (♂) gen. prep. A. VOJNITS.

I dedicate the new species to Mr. G. EBERT, Karlsruhe, as a commemoration of his merits attained in the investigations of the lepidopterous fauna of Iran.

**Acknowledgements.** The studies necessary for my revisionary work on the Palaearctic *Eupithecia* species have been made possible by the stipend granted by the A. Humboldt Foundation, to be thanked also here. I am indebted also to DR. R. U. ROESLER, at that time Keeper of the Lepidoptera collection of the A. Koenig Museum, Bonn, and to Professor DR. E. F. G. SAUER, Director of the same institute, to DR. W. FORSTER, Director of the zoological collection of the Bavarian State, Munich, and to DR. H. J. HANNEMANN, Director of the Zoological Museum of the Humboldt University, Berlin.

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## REVISION DER ART DENDROBAENA PLATYURA (FITZINGER, 1833) (OLIGOCHAETA: LUMBRICIDAE)

Von

A. ZICSI

(Eingegangen am 28. November 1977)

A revision of *Dendrobaena platyura platyura* (FITZINGER, 1833) and its two subspecies, *D. p. depressa* (ROSA, 1893) and *D. p. montana* (ČERNOSVITOV, 1932). Male genital pore of these taxa situated not on segment 15 (as characteristic of the family), but on the respective ring; since location of male genital pore of functional importance during copulation, this unusual feature substantiating the establishment of the new genus *Fitzingeria* gen. n.

Seit der Gattungsrevision von POP (1941) sind innerhalb der Familie Lumbricidae andauernd Versuche durchgeführt worden, weitere genotypische Merkmale zu bestimmen, um die von POP als Sammelgattungen betrachteten Einheiten (*Allolobophora*, *Eisenia* und *Dendrobaena*) in weitere Gattungen bzw. Untergattungen aufteilen zu können (OMODEO, 1956; GATES, 1969; BOUCHÉ, 1972; PEREL, 1976).

Während meiner, sämtliche Arten der Familie Lumbricidae betreffenden Revisionstätigkeit bin ich auf ein Merkmal gestoßen, welchem bisher nicht entsprechende Bedeutung zugemessen wurde. Es handelt sich um die Lage der männlichen Poren.

Fast sämtliche Bestimmungsbücher oder systematische Werke betrachten die Lage der männlichen Poren als Begrenzungsmerkmal der Familie Lumbricidae und geben in der Familiendiagnose eine Lage auf dem 15. Segment an, wobei das 13. bzw. 14., ganz selten das 16. Segment eine Ausnahme bildet. POP (1948) erweitert diese Diagnose und meint, daß bei einigen Arten ganz selten die Ausmündung der männlichen Poren auch bis zum 30. Segment vorkommen kann. Diese Äußerung von POP kann auf die Erkenntnis von COGNETTI DE MARTIIS (1905) zurückgeführt werden, der bei *Octolasion damiani* ein Variieren vom 21. bis zum 30. Segment feststellte. Keiner der erwähnten Autoren, aber auch im späteren BALDASSERONI (1919) (*O. kamnensis* ♂ 17. Segment), OMODEO, 1952 (*O. minore* ♂ 20.—25. Segment), OMODEO, 1962 (*O. boninoi* ♂ 27.—28. Segment), ZICSI, 1971 (*O. phaenohemiandrum* ♂ 19., 22., 23. und 24.) gehen nicht näher auf diese Frage ein und begnügen sich damit, dieses Merkmal zusammen mit anderen Merkmalen zur Begrenzung von Arten in Betracht zu ziehen. Da innerhalb dieser Gattung zur Klärung dieser Frage meinerseits wei-



tere Untersuchungen eingeleitet wurden, soll in einer späteren Arbeit über die systematische Bedeutung dieses Merkmales innerhalb dieser Gattung Stellung genommen werden.

Ein ähnliches Auftreten dieses Merkmales läßt sich auch innerhalb der Gattung *Dendrobaena* verfolgen, jedoch mit dem Unterschied, daß bei den betreffenden Arten bzw. Unterarten die männlichen Poren konstant auf dem Gürtel im Bereich der Pubertätswällen liegen. Unter den heute der Gattung *Dendrobaena* zugereichten Arten (POP, 1941; OMODEO, 1956; ZICSI, 1965; PEREL, 1972) konnte bei einer gründlichen Überprüfung des mir zur Verfügung stehenden reichen Artenmaterials nur bei drei Taxa diese Feststellung gemacht werden. Es handelt sich um die heute unter der Benennung *Dendrobaena platyura platyura* (FITZINGER, 1833), *D. p. depressa* (ROSA, 1893) und *D. p. montana* (ČERNOSVITOV, 1932) bekannten Tiere.

Wie selbstverständlich die Lage der männlichen Poren auf dem 15. Segment betrachtet wurde, beweist uns der Umstand, daß alle Spezialisten, die sich mit diesen Arten befaßten, dies Merkmal übersehen haben. In den Originalbeschreibungen erwähnt zum Beispiel FITZINGER (1833) bei *Enterion platyurum* »keine Genitalporen?« und fügt ein Fragezeichen hinzu; ROSA (1893) schreibt bei *Allolobophora platyura* ssp. *depressa* »Aperture maschili invisibili« und ČERNOSVITOV (1932), dem wir die Beschreibung der dritten Art, *Octolasion montanum*, verdanken, meint: »männliche Poren unscheinbar«. Die späteren Beschreibungen nehmen mit Selbstverständlichkeit an, daß die männlichen Poren auf dem 15. Segment liegen, und fügen noch die Bemerkung »unscheinbar«, »unsichtbar«, oder »männliche Poren sehr klein, ohne Drüsenhöfe« dazu (ÖRLEY, 1881, 1885; MICHAELSEN, 1900; SZÜTS, 1909; ČERNOSVITOV, 1935; POP, 1943, 1948; ZICSI, 1965; WILCKE, 1968).

Wie aus den angeführten Beispielen zu ersehen ist, besteht kein Zweifel darüber, daß dies Merkmal bisher übersehen wurde und so auch systematisch nicht gewertet werden konnte.

**Die Bedeutung der männlichen Poren bei der Kopulation.** — Da beim Begattungsakt die Spermatozoen in die Samentaschen des Partners eingeführt werden müssen, spielt die Lage der männlichen Poren bei der Kopulation einzelner Arten eine ausschlaggebende Rolle. Es ist bekannt, daß die Gürtelorgane und Samentaschenporen bei Arten der Familie Lumbricidae so angeordnet sind, daß sie während der Kopulation miteinander korrelieren. Bei der Begattung legen sich zwei Tiere in umgekehrter Richtung mit der Bauchseite so aneinander, daß der Gürtel des einen der Samentaschenregion des anderen gegenüberliegt. Durch den von Hautdrüsen des Gürtels ausgeschiedenen Schleim, der rasch erhärtet, werden die Tiere in diesen beiden Regionen eng zusammengeschnúrt. Da die männlichen Poren in ihrer üblichen Lage am 15. Segment außerhalb dieser Umschnürung bleiben, müssen die Spermatröpfchen entlang der Samensinnen, bewirkt durch wellenartiger Bewegungen besonderer Hautmuskeln, in

entgegengesetzter Richtung fließend die Samentaschenporen des anderen Tieres erreichen.

Bei Arten mit männlichen Poren in der Gürtelregion muß sich meines Erachtens der Verlauf der Begattung bedeutend einfacher vollziehen. Obwohl die männlichen Poren und Samentaschenporen nach Zahl nicht korrelieren (wie bei den Enchytraeiden), besteht während der Begattung in der Lage dieser Organe hingegen eine Übereinstimmung. Aus den bei der Kopulation den Samentaschen gegenüberliegenden männlichen Poren gelangen die Spermatozoen entweder direkt in die Samentaschenporen oder werden von den Pubertätswällen auf kurzem Wege in diese geleitet. Soweit beobachtet werden konnte, bildet sich bei diesen Tieren während der Kopulation auch keine Schleimhülle, wodurch die Begattung sofort unterbrochen werden kann. Mit Sicherheit kann also angenommen werden, daß der Verlauf der Kopulation sich funktionell bei Tieren mit männlichen Poren in der Gürtelregion anders gestaltet als bei solchen, bei denen die männlichen Poren am 15. Segment liegen.

Nachdem Untersuchungen an Serienmaterial dieser Arten von verschiedenen Fundorten (s. weiter unten) durchgeführt wurden und sich dies Merkmal in der Gürtelregion als konstant erwies, fühle ich mich berechtigt, für die weiter oben angeführten Taxa eine neue Gattung aufzustellen.

### **Fitzingeria** gen. n.

Kopf epilobisch 1/2 hinten geschlossen. Farbe rotviolett, dunkelgrau mit rötlichen Reflexen. Borsten ungepaart. Weibliche Poren am 14. Segment, oberhalb der Borstenlinie *b*. Männliche Poren auf einem der Gürtelsegmente in Höhe der Pubertätswälle, winzig kleine Öffnungen. Gürtel ringförmig.

Dissepimente 13/14 und 14/15 äußerst stark verdickt. 5 Paar perlschnurartige Herzen im 7.—11. Segment, und ein Paar wurstförmige Herzen im 12. Segment. Kalkdrüsen im 10.—12. Segment mit Ausbuchtungen im 10. und 11. Segment. 2 periösophageale Testikelblasen, die die Hoden, Samentrichter und Samensäcke einschließen, im 10. und 11. Segment. Drei Paar Samensäcke im 9., 11. und 12. Segment oder zwei Paar im 11. und 12. Segment. 2—4 Paar Samentaschen, Samentaschenporen in der Borstenlinie *d*, Muskulatur gefiedert, Typhlosolis mehrästig verzweigt.

Typische Art: *Fitzingeria platyura platyura* (FITZINGER, 1833).

Von allen bisher beschriebenen Gattungen der Familie Lumbricidae unterscheidet sie sich durch die Lage der männlichen Poren auf einem der Gürtelsegmente.

Da in der einschlägigen Literatur, aber insbesondere in der Arbeit von POP (1943) vorzügliche Beschreibungen der drei Taxa vorliegen, beschränke ich mich bei der Bekanntmachung auf eine Kurzdiagnose der Tiere und füge die von mir festgestellten Ergänzungsmerkmale hinzu.



*Fitzingeria platyura platyura* (FITZINGER, 1833)

- Enterion platyurum*, FITZINGER 1833: Isis, 553  
*Lumbricus terrestris* var. *platyurus* (part.), ÖRLEY 1880: Érték. Term. Kőr., **15** (18): 18.  
*Allolobophora oerleyi* (part.), HORST 1887: Notes Leyden Mus., **9**: 294.  
*A. (Dendrobaena) platyura* ssp. *typica*, ROSA 1893: Mem. Acc. Torino, ser. 2, **43**: 439.  
*A. fitzingeri*, BEDDARD 1895: Monogr. Olig., 721.  
*Helodrilus (Dendrobaena) platyurus (typicus)*, MICHAELSEN 1900: Tierreich, **10**: 494.  
*Allolobophora platyura* (part.), WESSELY 1905: Ver. Naturk. Linz, **43**: 13—14.  
*Helodrilus (Dendrobaena) platyurus* (part.), SZÜTS 1909: Állatt. Közlem., **8**: 20.  
*Dendrobaena platyura* f. *typica*, ČERNOSVITOV 1935: Arch. Prirod. Vyzkum Čech., **19** (1): 42—43.  
*D. platyura* f. *typica*, POP 1943: Zool. Jahrb. Syst., **76**: 399—401.  
*D. platyura* f. *typica*, POP 1948: Ann. Ac. Rep. Pop. Rom., **1**: 488.  
*D. platyura* f. *typica*, ZICSI 1965: Naturkl. Jahrb. Linz, **11**: 147.  
*D. platyura* f. *typica*, WILCKE 1968: Die Tierwelt Mitteleuropas, **1**: 135.  
*D. platyura* f. *typica*, PLISKO 1973: Fauna Polski, **1**: 74.

Es wurden 167 Exemplare von 37 verschiedenen Fundorten untersucht.  
 Länge 65—170 mm, Durchmesser 4—8 mm, Segmentzahl 90—170.

Farbe am Rücken rotviolette pigmentiert, hinter dem Gürtel pigmentlos.  
 Kopf epilobisch 1/2 hinten geschlossen. Erster Rückenpore in der Intersegmentalfurche 6/7. Nephridialporen im 6. Segment beginnend. Weibliche Poren am 14. Segment, mit kleinen Öffnungen oberhalb der Borste *b*. Männliche Poren auf den Pubertätswällen oberhalb der Borstenlinie *b*, winzig kleine Öffnungen am 26. Segment. Das Variieren der männlichen Poren auf dem 26., einerseits auf dem 26. andererseits auf dem 27., und auf dem 27. Segment wird in Tabelle 1 zusammengefaßt.

**Tabelle 1**

*Variieren der männlichen Poren  
 bei Fitzingeria platyura platyura (FITZINGER 1833)*

	Segment		
	26	26/27	27
Exemplare	164	1	2
Prozent der Exemplare	98,2	0,59	1,19

Wie aus den Angaben der Tabelle ersichtlich, ist die Lage auf dem 26. Segment konstant, die Abweichungen sind äußerst gering. Gürtel ringförmig, vom 1/2 24. 25.—1/2 30., 30. Segment, am 1/2 24. und 1/2 30. Segment seltener, am häufigsten auf dem 25.—30. Segment. Pubertätswälle vom 25., 26.—29. Segment. Geschlechtsborsten tragende Drüsenpapillen fehlen.

Dissepimente 5/6, 8/9 und 12/13 verdickt, 13/14—14/15 äußerst stark verdickt. Drei Paar Samensäcke im 9., 11. und 12. Segment. (Abweichend von POP konnten nie Samensäcke im 10. Segment vermerkt werden.) Zwei periösopha-

geale Testikelblasen im 10. und 11. Segment, welche die Hoden und Samentrichter und auch die Samensäcke des 11. Segmentes einschließen. Innere Samenrinne bis zum 26. Segment deutlich zu erkennen. Zwei Paar Samentaschen mit kurzem Stiel im 9. und 10. Segment, Samentaschenporen in den Intersegmentalfurchen 9/10 und 10/11, in der Borstenlinie *d*. Längsmuskulatur gefiedert (Abb. 1), Typhlosolis mehrästig verzweigt (Abb. 2).\*



Abb. 1—2. *Fitzingeria platyura platyura* (FITZINGER, 1833). 1 = Querschnitt durch den Hautmuskelschlauch des postclitellialen Körpers; Längsmuskulatur, gefiedert Typus, ca 160 ×; 2 = Typhlosolis, Querschnitt am postclitellialen Teil des Körpers, ca 160 ×

Fundorte. In vorliegender Arbeit werden nur die Fundorte angeführt, deren Material bei der Überprüfung berücksichtigt wurde. Bezüglich des übrigen Materials, welches in der Sammlung des Institutes aufbewahrt wird, geben die Fundortslisten der bereits erschienenen Arbeiten (ZICSI, 1965a, b, c, 1968) Aufschluß.

Österreich: 268. Östlich von Wien, 2 Ex., leg. H. FRANZ; 2318. Dürrwien, 3 Ex., 11. V. 1963, leg. A. ZICSI; 3688. Aigen-Schlägl, 2 Ex., 2. VIII. 1964, leg. A. ZICSI; 3738. St. Veigt, Hansberg, 4 Ex., 19. VII. 1964, leg. A. ZICSI; 3760. Mauthausen, 2 Ex., 29. VII. 1964, leg. A. ZICSI; 3756. Vöcklabruck, 4 Ex., 6. VIII. 1964, leg. A. ZICSI; 3825. Linz, Neue Heimat, 1 Ex., 10. VII. 1964, leg. A. ZICSI; 5071. Purgstall, 2 Ex., 8. IV. 1966, leg. F. RESSL; 5089. Feichsen, Gaisberg, 1 Ex., 7. VII. 1966, leg. F. RESSL; 5122. Purgstall, 3 Ex., 24. VIII. 1966, leg. F. RESSL; 6025. Grünau, 6 Ex., 25. X. 1968, leg. A. ZICSI; 6448. Grünbach/Freistadt,

\* Das Material, nach dem die Mikrophotos angefertigt wurden, wurde nach dem Verfahren Susa-Heidenhein fixiert und mit Hämotoxylin nach Ehrlich gefärbt. Plasmafärbung mit Eosin.

Für die Anfertigung der Querschnitte spreche ich Frau DR. B. HAFIEK, Zoologisches Institut der Universität, Budapest, auch an dieser Stelle meinen besten Dank aus.



1 Ex., 22. IX. 1934, leg. SCHWARZ; 7754, 7768, 7778, 7784, Lobau, 12 Ex., aus Bodenfallen 27. III. 1972.—26. III. 1973, leg. H. STEINER; 7799, 7800. Orth an der Donau, 18 Ex., aus Bodenfallen, 24. IV. 1972.—26. III. 1973, leg. H. STEINER; 7813, 7816. Stockerau, 20 Ex., aus Bodenfallen, 22. III. 1972.—21. II. 1973, leg. H. STEINER; 8147, 8148. Lobau, 11 Ex., 28. VII. 1975, leg. A. ZICSI; 8153. Hainburg, 16 Ex., 28. VII. 1975, leg. A. ZICSI. — T s c h e c h o - s l o w a k e i. 21. Bojnica, 3 Ex., 21. X. 1960, leg. K. TABORSKY u. A. ZICSI. — J u g o s l a - w i e n. 6732. Postojna, 1 Ex., 11. IX. 1969, leg. A. ZICSI. — R u m ä n i e n. D. 8. Nagykároly, 1 Ex., V. 1941, leg. V. POP. — B u l g a r i e n. 7330. Plovdiv, 1 Ex., 8. VI. 1971, leg. Á. BERCEK. — U n g a r n. 894. Sopron, Deák-Quelle, 6 Ex., 1. VI. 1961, leg. A. ZICSI; 1654. Rajka, 1 Ex., 5. VIII. 1961, leg. A. ZICSI; 2957. Leitha-Kanal, 8 Ex., 16. X. 1963, leg. A. ZICSI; 2965. Zsejke, 16 Ex., 16. X. 1963, leg. A. ZICSI; 2976. Magyarkimle, 9 Ex., 16. X. 1963, leg. A. ZICSI; 3161. Gerece-Gebirge, 1 Ex., 5. IV. 1964, leg. S. HORVÁTOVICH; 3377. Bakony-Gebirge, Cuha-Tal, 1 Ex., 2. VI. 1964, leg. S. MAHUNKA; 4429. Felsőtárkány, 8 Ex., 20. IV. 1966, leg. A. ZICSI; 4517. Badacsonytördemic, 5 Ex., 3. V. 1965, leg. A. ZICSI; 4850. Márkó, 2 Ex., 20. X. 1965, leg. A. ZICSI; 5230. Szendehely, 3 Ex., 1. IV. 1967, leg. A. ZICSI; 5606. Zwischen Páli und Répcelak, 2 Ex., 18. V. 1967, leg. A. ZICSI; 5654, 7892, 7990, 8030, 8037, 8042, 8049, 8053, 8058, 8060, 8071, 8075, 8079, 8098, 8216, 8439. Szendehely, 48 Ex., strukturzöologische Aufnahmen 1971—1976, leg. A. ZICSI; 5718. Sopron, 1 Ex., 20. VI. 1967, leg. A. ZICSI; 7107. Magyarkút, 1 Ex., 2. XII. 1970, leg. A. ZICSI; 8170, 8192—94. Velem, 48 Ex., 19. XI. 1975, leg. Á. SZÉKELY u. A. ZICSI; 8201—5. Cák, 49 Ex., 18. XI. 1975, leg. A. ZICSI u. Á. SZÉKELY.

### *Fitzingeria platyura depressa* (ROSA, 1893)

*Enterion platyurum* (part.), FITZINGER 1833: Isis: 553.  
*Lumbricus terrestris* var. *platyurus* (part.), ÖRLEY 1881: Math. Term. Közlem., **16**: 583.  
*Octolasion platyurum* (part.), ÖRLEY 1885: Érték. Term. Kör., **15** (18): 18.  
*Allolobophora oerleyi* (part.), HORST 1887: Notes Leyden Mus., **9**: 294.  
*A. (Dendrobaena) platyura* subsp. *depressa*, ROSA 1893: Mem. Acc. Torino, **2** (43): 439.  
*A. oerleyi*, BEDDARD 1895: Monogr. Olig.: 720.  
*Helodrilus (Dendrobaena) platyurus depressus*, MICHAELSEN 1900: Tierreich, **10**: 494.  
*Allolobophora platyura* (part.), WESSELY 1905: Jahrber. Ver. Naturk. Linz, **34**: 13—14.  
*Helodrilus (Dendrobaena) platyurus* (part.), SZÜTS 1909: Állatt. Közlem., **8**: 20.  
*Dendrobaena platyura* var. *depressa*, ČERNOSVITOV 1935: Arch. Prirod. Vyzkum Čech., **19**: 43.  
*D. platyura* var. *depressa*, POP 1943: Zool. Jahrb. Syst., **76**: 401—402.  
*D. platyura* var. *depressa*, POP 1948: Ann. Ac. Rep. Pop. Rom., **1**: 489.  
*D. platyura* var. *pannonica*, PROKSOVA 1954: Prirod. Sborn Ostrav., **15**: 523—524.  
*D. platyura* var. *moravica*, PROKSOVA 1954: Prirod. Sborn. Ostrav., **15**: 523—524.  
*D. platyura* var. *depressa*, ZICSI 1965: Naturkl. Jahrb. Linz, **11**: 147—148.  
*D. platyura* var. *depressa*, WILCKE 1968: Die Tierwelt Mitteleuropas, **1**: 135.  
*Dendrobaena (Dendrobaena) platyura* f. *depressa*, PLISKO 1973: Fauna Polski, **1**: 76—77.

Es wurden 184 Exemplare von 34 Fundorten untersucht.

Länge 80—190 mm, Durchmesser 4—9 mm, Segmentzahl 80—230.

Rücken am Vorderkörper dunkelgrau, mit durchschimmerndem rötlichen Reflex. Kopf epilobisch 1/2 hinten geschlossen. Erster Rückenporus in der Intersegmentalfurche 5/6 oder 6/7. Nephridialporen im 6. Segment beginnend. Weibliche Poren am 14. Segment, mit kleinen Öffnungen oberhalb der Borste *b*. Männliche Poren, am häufigsten auf dem 26. Segment, öffnen sich in Höhe der Pubertätswällen oberhalb der Nephridialporen und Borste *b*. Die Öffnungen der männlichen Poren sind winzig klein. Das Variieren der Ausmündungen bei den männlichen Poren wird in Tabelle 2 zusammengefaßt.

Wie aus den Angaben der Tabelle ersichtlich, ist die Lage auf dem 26. Segment ziemlich konstant, die Abweichungen bleiben im Bereich der Gürtelorgane. Gürtel ringförmig, vom 25.—30. Segment, selten auf der Dorsalseite

Tabelle 2

*Varrieren der männlichen Poren  
bei Fitzingeria platyura depressa (ROSA, 1893)*

	Segment				
	25	25/26	26	26/27	27
Exemplare	1	1	167	9	6
Prozent der Exemplare	0,54	0,54	90,76	4,89	3,59

auch auf das 1/2 24. oder 24. Segment übergehend. Pubertätswälle vom 1/2 25.—1/2 30. Segment, manchmal auch das ganze 25. oder 30. Segment einnehmend. Die Borsten *a* oder *a* und *b* des 9. und 29. Segmentes von Drüsenpapillen umgeben und in Geschlechtsborsten verwandelt, Drüsenpapillen konnten ferner bei einigen Exemplaren auch noch am 11., 25. und 30. Segment festgestellt werden.

In den inneren Merkmalen weicht sie von *platyura platyura* in der Zahl der Samentaschen ab. Sie besitzt meistens drei Paar im 8., 9. und 10. Segment, oder 4 Paar im 7., 8., 9. und 10. Segment. Es sind mir einige Exemplare bekannt, wo auch ein 5. Paar im 6. Segment vorgefunden werden konnte. Die Öffnungen der Samentaschenporen befinden sich in der Borstenlinie *d* in den Intersegmentalfurchen 7/8—10/11. (oder beim 5. Paar auch in 6/7). Die von mir untersuchten Exemplare besitzen nur 3 Paar Samensäcke im 9., 11. und 12. Segment. 2 periösophageale Testikelblasen im 10. und 11. Segment schließen Hoden und Samentrichter sowie die Samensäcke des 11. Segmentes ein. Die im Inneren verlaufende Samenrinne ist bis zum 26. Segment (resp. 27.) deutlich zu erkennen. Längsmuskulatur gefiedert (Abb. 3) Typhlosolis mehrästig verzweigt (Abb. 4).

Fundorte. Bundesrepublik Deutschland: 292. Fridigen, 1 Ex., 13. IX. 1961, leg. O. SCHMIDT. — Österreich: 269. Nördlich von Wien, 2 Ex., leg. H. FRANZ; 2307. Dürrwien, 1 Ex., 11. V. 1963, leg. H. FRANZ u. A. ZICSI; 2329. Laxenburg, 2 Ex., 14. V. 1963, leg. A. ZICSI; 2528, 2539. Orth an der Donau, 18 Ex., 27.—28. V. 1963, leg. H. MARGL u. A. ZICSI; 5078. Caming, 1 Ex., 6. IV. 1966, leg. F. RESSL; 5140. Scheibbs, 1 Ex., 10. VIII. 1966, leg. F. RESSL; 7772—73. Lobau, 3 Ex., aus Bodenfallen, 27. III. 1972.—26. III. 1973, leg. H. STEINER; 7785—90. Orth an der Donau, aus Bodenfallen, 24 Ex., 24. IV. 1972.—26. III. 1973, leg. H. STEINER; 7848. Schanboden, 1 Ex., 25. IX. 1971, leg. F. RESSL; 8145, 8154. Lobau, 5 Ex., 28. VII. 1975, leg. A. ZICSI. — Tschechoslowakei: 22. Bojnica, 3 Ex., 21. X. 1960, leg. K. TABORSKY u. A. ZICSI; 35. Bojnica, 2 Ex., 21. X. 1960, leg. A. ZICSI; 54. Krasna dolina, 5 Ex., 21. X. 1960, leg. I. ZAJONC und A. ZICSI; 5959. Dobsina, 3 Ex., 2. VII. 1968, leg. DÓZSA-FARKAS. — Jugoslawien: 6505. Vukova Gorica, 4 Ex., 29. IV. 1969, leg. A. ZICSI; 6674. Dobož, 3 Ex., 9. V. 1969, leg. M. POBOZSNY u. A. ZICSI; 7030. Vojvodina, Fruska Gora, 1 Ex., 12. V. 1971, leg. S. HORVÁTOVICH; 7647—48. Fruska Gora, 4 Ex., 18. VI. 1972, leg. A. ZICSI. — Rumänien: 3465. Sintereag, Cluj, 1 Ex., 14. IV. 1934, leg. L. BLAGA; 7945—46. Bucova, 7 Ex., 16. VIII. 1974, leg. A. ZICSI. — Ungarn: 534. Aggtelek, 3 Ex., 20. VI. 1960, leg. A. ZICSI; 547, 621, 640, 643, 649. Dunaföldvár, strukturzöologische Aufnahmen in den Jahren 1961—63, leg. A. ZICSI, 15 Ex., 600. Donau, Stromkm. 1605,5, 3 Ex., 3. XI. 1961, leg. A. ZICSI; 616. Martonvásár, 1 Ex., 24. IV. 1960, leg. A. ZICSI; 5231, 8417, 8440—42. Szendehely, strukturzöologische Aufnahmen in den Jahren 1971—76, leg. A. ZICSI,



17. Ex., 5431. Órtilos, 2 Ex., 14. IV. 1967, leg. S. MAHUNKA; 7158—59. Bőszénfa, 9 Ex., 29. III. 1971, leg. A. ZICSI; 7164. Pécs, 5 Ex., 29. III. 1971, leg. A. ZICSI; 7185, 7890. Pilis-Gebirge, Lajosforrás, 34 Ex., 29. IX. 1972, leg. A. ZICSI; 7206. Gödöllő, Petőfi-forrás, 9 Ex., 5. X. 1970, leg. A. ZICSI; 8266, 8271—74. Pétervására, 12 Ex., 6. VIII. 1975, leg. A. ZICSI u. Á. SZÉKELY; 8568. Szarvaskő, Teréz-forrás, 33 Ex., 24. X. 1974, leg. A. ZICSI.

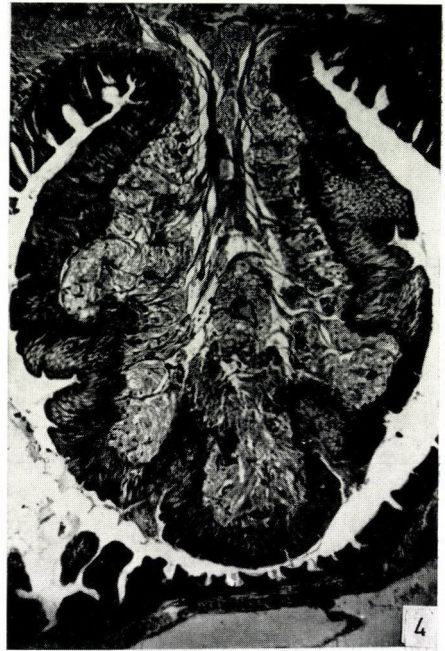


Abb. 3—4. *Fitzingeria platyura depressa* (ROSA, 1893). 3 = Querschnitt durch den Hautmuskelschlauch des postclitellianen Körpers; Längsmuskulatur, gefiederter Typus, ca 16  $\times$ . — 4 = Typhlosolis, Querschnitt am postclitellianen Teil des Körpers, ca 160  $\times$

### *Fitzingeria platyura montana* (ČERNOSVITOV, 1932)

- Octolasion montanum*, ČERNOSVITOV 1932: Zool. Jahrb. Syst., **62**: 535—536.  
*O. montanum*, ČERNOSVITOV 1935: Arch. Prirod. Vyzkum Čech., **19**: 68—69.  
*Dendrobaena platyura* var. *montana*, POP 1943: Zool. Jahrb. Syst., **76**: 402—403.  
*D. platyura* var. *montana*, POP 1948: Ann. Ac. Rep. Pop. Rom., **1**: 489—490.  
*D. platyura* var. *montana*, ZICSI 1965: Naturkl. Jahrb. Linz, **11**: 148—150.  
*D. platyura* var. *montana*, WILCKE 1968: Die Tierwelt Mitteleuropas, **1**: 135.  
*D. platyura* var. *montana*, PEREL 1972: Zool. Zurn., **60**: 794.  
*Dendrobaena* (*Dendrobaena*) *platyura* f. *montana*, PLISKO 1974: Fauna Polski, **1**: 77—78.

Es wurde 161 Exemplare von 22 verschiedenen Fundorten untersucht.

Länge 110—380 mm, Durchmesser 8—15 mm, Segmentzahl 130—196.

Farbe dunkelgrau, rötlicher Reflex auf der Dorsalseite des Vorderkörpers kaum zu erkennen. Kopf proepilobisch bis epilobisch 1/3 hinten geschlossen. Erster Rückenporus in der Intersegmentalfurche 8/9 oder 9/10. Nephridialporen im 6. Segment beginnend. Weibliche Poren auf dem 14. Segment, kleine Öffnungen oberhalb der Borste *b*. Männliche Poren variieren, am häufigsten auf dem 25. Segment, öffnen sich in Höhe der Pubertätswälle oberhalb der Nephridial-

poren und Borstenlinie *b*. Die Öffnungen sind winzig kleine Schlitzte. Das Variieren der Lage bei den männlichen Poren wird in Tabelle 3 zusammengefaßt.

Da sich der Gürtel vom 1/2 24., 25.—1/2 30., 30. Segment erstreckt, die Pubertätsstreifen auf dem 1/2 24.—1/2 30. Segment liegen, fallen 95,93% der

Tabelle 3

Variieren der männlichen Poren  
bei *Fitzingeria platyura montana* (ČERNOSVITOV, 1932)

	Segment								
	22/23	23	23/24	24/25	24	24/25	25	25/26	26
Exemplare	1	2	2	1	32	13	91	7	12
Prozent der Exemplare	0,62	1,24	1,24	0,62	19,87	8,07	56,20	4,37	7,45

männlichen Poren in den Bereich der Gürtelorgane und variieren hier vom 24.—26. Segment. Am häufigsten kommen sie jedoch am 25. Segment vor. Die Drüsenpapillen tragenden Borsten *a* und *b* sind am häufigsten am 25. Segment, doch oft sind auch die der Segmente 30., 33., 34., 35. und 36. von Drüsenpapillen umgeben.

In den inneren Merkmalen weicht sie von den anderen beiden Unterarten vor allem dadurch ab, daß sie konstant nur über zwei Paar Samensäcke im 11. und 12. Segment verfügt. Zwei periösophageale Testikelblasen im 10. und 11. Segment schließen die Hoden und Samentrichter sowie die Samensäcke des 11. Segmentes ein. 3 Paar Samentaschen im 8., 9. und 10. Segment (selten 4 oder 5 Paar), Samentaschenporen öffnen sich in der Borstenlinie *d* in den Intersegmentalfurchen 8/9—10/11. Die im Inneren verlaufende Samenrinne ist deutlich zu erkennen. Längsmuskulatur gefiedert (Abb. 5). Typhlosolis mehrästig verzweigt (Abb. 6).

Fundorte: Österreich: 2280, 2282, 2286. Mödling-Frauenstein-Anniger, 6 Ex., 10. V. 1963, leg. G. HEYBACH u. A. ZICSI; 3696. Aigen Schlägel 1 Ex., 1. VIII. 1964, leg. A. ZICSI; 3728. St. Veigt, O. Öst. 1 Ex., 19. VII. 1964, leg. A. ZICSI. — Tschechoslowakei: 55. Krasna dolina, 5 Ex., 21. X. 1960, leg. K. TABORSKY u. A. ZICSI. — Rumänien: 197, 432. Intorsura Buzoului, 3 Ex., XI. 1957, leg. A. BORSOVICZKY; 276. Sintereag, 1 Ex., 14. IV. 1934, leg. L. BLAGA; 7588. Bagan, 1 Ex., 19. XI. 1971, leg. E. SZÉKELYHIDY; 7928. Mte. Piatra Mare (Hohenstein, vor dem Leitern-Weg), 3 Ex., 27. VIII. 1974, leg. A. ZICSI. — Sowjetunion: 8618. Lozov, leg. T. PEREL, 1 Ex., 1961. — Ungarn: 527. Aggtelek, 5 Ex., 24. III. 1961, leg. A. ZICSI; 2899. Aggtelek, 6 Ex., 22. XI. 1962, leg. A. ZICSI; 574, 584. Szalonna, 6 Ex., 24. II. 1961, leg. A. ZICSI; 1932. Szalonna, 6 Ex., 29. V. 1962, leg. A. ZICSI; 3466. Szalonna, 5 Ex., 30. V. 1964, leg. A. ZICSI; 3030. Szalonna, 3 Ex., 22. III. 1963, leg. A. ZICSI; 7110. Szalonna, 3 Ex., 23. II. 1971, leg. A. ZICSI; 785. Szilvásvárad, 6 Ex., 26. V. 1961, leg. A. ZICSI; 7594. Szilvásvárad, 1 Ex., 14. IV. 1972, leg. S. MAHUNKA; 1943. Jósavafő, 20 Ex., 30. V. 1962, leg. A. ZICSI; 5912. Jósavafő, 2 Ex., 22. III. 1968, leg. M. POBOZSNY; 3984. Bódvaszilás, 57 Ex., 29. VIII. 1964, leg. M. CSUTOR; 4222. Zemplén-Gebirge, Regée, 25 Ex., 27. IV. 1965, leg. A. ZICSI u. M. POBOZSNY; 4271. Emőd, 13 Ex., 27. IV. 1965, leg. A. ZICSI; 5669, 5680. Cserépfalva, 4 Ex., 22. IX. 1967, leg. A. ZICSI u. M. POBOZSNY; 5990, 5997. Füzér, 6 Ex., 11. VI. 1968, leg. A. ZICSI u. M. POBOZSNY; 7133, 7143—45. Tiszakóród, 22 Ex., 14. IV. 1969,



leg. A. ZICSI; 7138. Tiszacsécse, 2 Ex., 14. IV. 1969, leg. A. ZICSI; 7557. Füzér, 1 Ex., 14. IV. 1972, leg. S. MAHUNKA; 7563, 7592. Nagybózsza, 4 Ex., 12. IV. 1972, leg. S. MAHUNKA; 7579. Nagymilic, 1 Ex., 12. IV. 1972, leg. S. MAHUNKA.

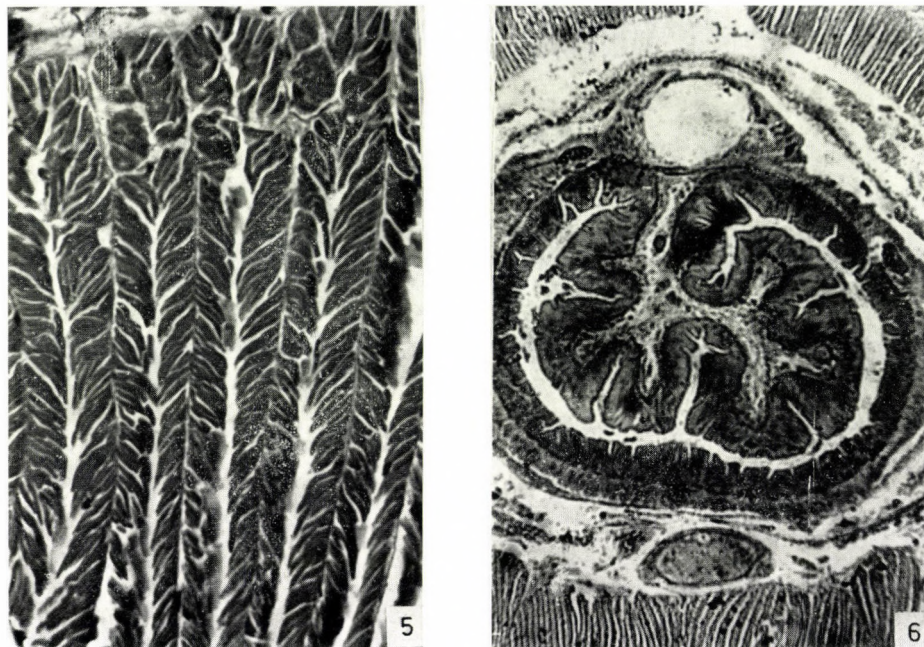


Abb. 5—6. *Fitzingeria platyura montana* (ČERNOSVITOV, 1932). 5 = Querschnitt durch den Hautmuskelschlauch des postclitellialen Körpers, Längsmuskulatur, gefiederter Typus, ca 160 $\times$ . — 6 = Typhlosolis, Querschnitt am postclitellialen Teil des Körpers, ca 160 $\times$

**Bemerkung.** Leider konnte das Typenmaterial keiner der drei Taxa überprüft werden, obwohl die Regenwurm-Sammlung des Naturhistorischen Museums in Wien und ein Teil der Regenwurm-Sammlung von ČERNOSVITOV von mir revidiert wurden (ZICSI, 1965c). POP gibt an, in der Sammlung des Naturhistorischen Museums in Wien die Exemplare von *Dendrobaena platyura* aus Wels gesehen zu haben, nach denen ROSA (1893) die Diagnose der Art aufgestellt hat (POP, 1943: 398). In einer vorausgehenden Arbeit (ZICSI, 1965c) äußerte ich mich ebenfalls, das unter Inv. Nr. 4993. registrierte Exemplar der Sammlung des Naturhistorischen Museums in Wien aufgrund der Beschriftung als den von FITZINGER aufgestellten Typus zu betrachten, jedoch mit dem Hinweis, daß die Exemplare aus Wels (Inv. Nr. 4995.) und das als Typus bezeichnete Tier der Unterart *depressa* angehört (ZICSI, 1965c: 298). Aufgrund einer wiederholten Überprüfung des unter Inv. Nr. 4993. aufbewahrten Tieres aus der Sammlung des Naturhistorischen Museums Wien,\* bezweifle ich, daß es

\* Für die Liebenswürdigkeit, das Material mir auf schnellstem Weg zugeschickt zu haben, spreche ich Herrn Prof. DR. H. LÖFFLER, Limnologisches Institut der Universität Wien, für seine Bemühungen auch an dieser Stelle meinen besten Dank aus.

sich dabei um das Original Exemplar von FITZINGER handelt. Der mit »Coll. Musei Vindobonensis« versehene Zettel des Gläschens führt die Beschriftung »*Helodrilus (D.) platyurus* (FITZ.) Typus, Österreich« und kann erst 1900 nach der Einteilung von MICHAELSEN beschriftet worden sein. Eine mit Bleistift versehene Handschrift gibt auf einem anderen Zettel an, *Lumbricus terrestris* var. *platyurus* ÖRLEY erkannt zu haben. Diese zweifelsohne frühere Beschriftung (ÖRLEY stellte diese Varietät 1881 auf) scheint die originale Beschriftung des Materials zu sein. Es muß also mit Recht bezweifelt werden, daß wir es mit dem Typus von FITZINGER zu tun haben.

Da jedoch ein äußerst reiches Material von allen 3 Taxa aus verschiedenen Ländern und vor allem aus Österreich überprüft wurde, besteht meines Erachtens kein Zweifel, daß auch bei den Typen die männlichen Poren in der Gürtelregion ausmünden.

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## TWO NEW SAWFLY SPECIES FROM ARMENIA (HYMENOPTERA: SYMPHYTA)

By

L. ZOMBORI

(Received 30 August, 1977)

The description of two new sawfly species: *Arge daduriani* sp. n. and *Athalia armenica* sp. n. is given.

Within the frame-work of an academic agreement between the Armenian and Hungarian Academies of Sciences, I had the opportunity in July, 1977 to visit Armenia and to make there zoological collectings concentrating mainly on the vast group of insects.

Of course, my special concern was to be better acquainted with the sawfly fauna of Armenia. This aim could be realized in two ways: first, to study the Symphyta material preserved in the Institute of Zoology of the Armenian Academy of Sciences (Yerevan), and second, to make field collectings in various regions of the country. My stay in Armenia was very efficiently organized and well planned in advance by the staff of the Institute of Zoology, enabling me to fulfil both aims of my mission, for which herewith I should like to extend my heartfelt thanks to them all.

My detailed research on the Armenian sawflies will be published at a later date. That work shall comprise three parts: my critical remarks on the sawfly collection of the Institute of Zoology (Yerevan), a complete list of sawflies collected during my trips in Armenia, and finally an assessment of my findings concerning the sawfly fauna of Armenia.

Presently I give the description of two new sawfly species discovered in the Symphyta collection of the Institute of Zoology (Yerevan).

### *Arge daduriani* sp. n.

Female. — Black with weak bluish metallic lustre. Head black with only palpi dark brownish in colour, tips of mandibles dark reddish brown. Labrum truncate in front, clypeus deeply, triangularly excised, depth of excision equaling length of pedicel. Interantennal area strongly produced extending right down to clypeus. Frontal area with clearly visible limiting carinae converging forwards between interantennal area, their meeting point obliterated somewhat below antennal sockets, lower face without a medial carina, instead some very



ill-defined longitudinally running creases present. Interantennal pit small and shallow. Anterior tentorial pits very deep. Malar space long, about 2.5 times the diameter of front ocellus. Postoccipital furrows not defined. Postocellar area normal, almost flat, nearly three times wider than long. Scape and pedicel black, 3rd antennal joint brown.

Thorax black with short, black hairs. Front lobes of mesonotum with a scarcely distinguishable medial furrow. Wings brownish infusate to height of pterostigma, therefrom somewhat lighter; venation and pterostigma dark brown. Median and cubital veins meeting each other in one point; 3rd cubital cross-vein evenly bent, thus cell above and below of about the same length. In all three pairs of legs coxa, trochanter, trochantellus and femur black, only extreme tip of first pair of femora yellowish white, tibiae yellowish white tending to become rusty towards apices, hind basitarsus at basal 2/3 yellowish white, all other basitarsi and rest of tarsal joints rusty; preapical spines, spurs and claws shining chestnut brown. Claws simple.

Abdomen black, covered by silvery white pubescence. Surface sculpture not characteristic. Sawsheath normal, robust with short, almost adpressed hairs. Hypopygium with a smooth, large triangular lunule in the middle. Ovipositor with minute, forward pointing denticles.

Length: 6.5 mm; alar expanse: 16 mm.

Male and food-plant unknown.

Holotype female: "Арм. ССР Иджеванск. р. Узунтала. 27. V. 55 Дабурян"; "*Arge nigripes* var. ? *Arge* sp.?" (in DADURIAN's handwriting). "Holotypus ♀ *Arge daduriani* sp. n. det. ZOMBORI, 1977". Deposited in the Institute of Zoology of the Armenian Academy of Sciences, Yerevan.

I dedicate my new species to the ardent collector and student of Armenian sawflies, DR. A. N. DADURIAN (Yerevan).

Remark: The left fore wing is partly torn behind pterostigma, but no part missing.

The new species is an ally of *Arge annulata* KONOW, 1891, and *Arge nigripes* (RETZIUS, 1783). It, however, differs from *A. annulata* by its smaller size, by the missing medial and apical brownish black rings of the hind tibia; from *A. nigripes* by the construction of the frontal and interantennal areas, as well as by the produced part of face below antennae (in *nigripes* a blunt keel present), by the colour of the legs and the size of the body.

#### ***Athalia armenica* sp. n.**

Female. — Yellow and black. Head black with the following parts yellow: mouth parts, labrum, mandibles (excepting brown tips), clypeus, malar space, interantennal area from height of centre of antennal sockets down to clypeus,

two tiny flecks at upper inner corners of eyes. Antenna black above, yellowish white beneath. Labrum evenly rounded at front margin, beset with some long, white, adpressed hairs. Clypeus smooth and shining, also with some hairs, front margin evenly rounded over entire length, not angled at either sides. Length of malar space about diameter of front ocellus. Interantennal distance about diameter of an antennal socket. Frontal area poorly defined; supra-antennal pits not distinguishable. POL shorter than OOL. Postocellar area not defined later-

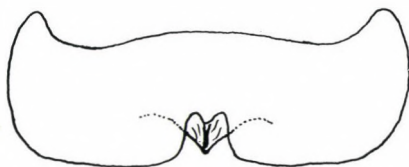


Fig. 1. Female hypopygium of *Athalia armenica* sp. n.

ally. Antennal joints beyond 3rd joint becoming shorter but only 9th joint onwards wider than long.

Thorax yellow, but cervical sclerites, meso- and postnotum black, a transversal band at border of mesopleuron and mesosternum also black. Legs yellow, fore pair entirely so, middle and hind pairs with apices of tibiae and tarsal joints black. Claws simple. Wings yellowish hyaline; tegulae, basal 1/3 of costa yellow, rest of costa, subcosta, pterostigma, intercostal cell dark brown, rest of venation yellow (at apex of wing venation somewhat infuscated).

Abdomen yellow throughout, without any surface sculpture, only projecting part of sawsheath on both sides black; setae laterally straight, apically somewhat bent inwards. Hypopygium entire, but in the middle quadrangularly excised (Fig. 1). Ovipositor with undifferentiated, very blunt teeth.

Length: 7 mm; alar expanse: 18 mm.

Male and host-plant unknown.

Holotype female: "Арм. ССР Уцел. Арпа-чай 7. VI. 1936?". "Holotypus ♀ *Athalia armenica* sp. n. det. ZOMBORI, 1977". Deposited in the Institute of Zoology of the Armenian Academy of Sciences, Yerevan.

The new species belongs to the "*rosae* and *liberta* complex" of BENSON (1962). It comes close to *Athalia cornubiae* BENSON, 1931, and also to a new species under description originating from Italy (ZOMBORI, 1978). Besides some smaller differences, the new species clearly differs from both congeners in the construction of its hypopygium (Fig. 1). The black transversal band at the border-line of the mesopleuron and mesosternum much resembles the black band of a typical *A. circularis* KL.; while the teeth of the ovipositor those given for *A. rosae* L.



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## АКТА ZOOLOGICA

ТОМ XXIV. ВЫП. 3-4

### РЕЗЮМЕ

#### НОВЫЕ ДАННЫЕ О ФАУНЕ ORIBATIDAE НЕОГЕИ (ACARINA). III

Й. БАЛОГ и Ш. МАХУНКА (Будапешт)

Из ряда новых таксонов, обнаруженных в ходе работы по подготовке монографии, подытоживающей фауну Oribatidae Неогена, авторы в настоящей статье публикуют описание 21 новых видов и 2 новых родов (*Phylloribatula* gen. n., *Trixylobates* gen. n.). Они установили, что название вида *Teratoppia pectinata* BAL. et MAH., 1969 уже было занято раньше, и поэтому для этого вида внедряют название *T. pluripectinata* nom. n. Они обнаружили также до сих пор неизвестный самец вида *Parakalumna foveolata* BAL. et MAH., 1969, показывающий в отношении самки вторичный половой диморфизм. Сообщаются и новые данные о местах обнаружения дальнейших видов, существенно изменяющие их прежний ареал распространения. В работе обсуждаются всего 50 видов Oribatidae.

#### ВИДЫ РОДА ZERCONIDAE (ACARI: MESOSTIGMATA) ИЗ МОНГОЛИИ

Ц. БЛАСАК (Познань)

Из материала собранного в ходе научных экспедиций д-ра К. Касаб в Монголии (1963—1968 гг.) автором, в настоящей работе сообщается описание 8 новых видов рода *Zercon* C. L. Коси (*kaszabi* sp. n., *mahunkai* sp. n., *adoxellus* sp. n., *acanticus* sp. n., *mongolicus* sp. n., *amphibolus* sp. n., *amidrytus* sp. n., *comaliatus* sp. n.) и одного нового вида рода *Prozercon* SELLSNICK (*micherdzinskii* sp. n.).

#### РОЛЬ ДВУХ ВИДОВ РОДА ENCHYTRAEIDA (OLIGOSCHAETA) В РАЗЛОЖЕНИИ ГРАБОВОЙ ЛЕСНОЙ ПОДСТИЛКИ В МЕЗОФИЛЬНЫХ ЛИСТВЕННЫХ ЛЕСАХ ВЕНГРИИ

К. ДОЖА—ФАРКАШ (Будапешт)

Автором изучается роль двух видов Enchytraeida [*Fridericia galba* (HOFFMEISTER, 1843), *F. ratzei* (EISEN, 1872)] в разложении лесной подстилки грабоводубравых лесонасаждений. На основе результата экспериментов по исследованию питания этих видов, при учете величин потребления лесной подстилки в различные месяцы, от августа 1975 до апреля 1977 гг, принимая во внимание индивидуальные величины и величины биомассы двух видов, живущих на образцовых площадях, удалось установить в процентах количество грабовой-лесной подстилки грабовых дубрав, потребляемое двумя видами ← рода ← Enchytraeida.

#### НОВЫЕ ВИДЫ РОДА MELOIDAE, ЖИВУЩИЕ В АФРИКЕ, АЗИИ И ЮЖНОЙ АМЕРИКЕ (COLEOPTERA)

З. КАСАБ (Будапешт)

В работе дается описание 11. новых видов рода Meloidae, обнаруженных в Азии, Африке и Южной Америке (*Epicauta wittmeri* sp. n., *E. korytkowskii* sp. n., *Lyttamorphaperuana* sp. n., *Clyindrothorax kochi* sp. n., *C. szalaymarzsoi* sp. n., *C. djibutii* sp. n., *C. tanaensis* sp. n., *C. prasinoides* sp. n., *Meloe coriarius himalayicus* ssp. n., *M. terentjevi* sp.



п., **M. schmidi**). Сообщается также ключ для идентификации видов I восточной группы рода *Epicauta*, видов II группы рода *Cylindrothorax* и рода *Lyttamorphia*. Новые синонимы: *Cylindrothorax prasinus* KASZAB, 1953 = *Lytta spinicornis* PIC var. *caeruleonotatus* PIC, 1914 = *Cylindrothorax caeruleonotatus* PIC, 1914, **comb. n.**)

#### ЭЛЕКТРОННОМИКРОСКОПИЧЕСКОЕ СКЕННИРОВАНИЕ НЕСКОЛЬКИХ ЕВРОПЕЙСКИХ ВИДОВ РОДА SYPHACIA (NEMATODA: OXYURIDAE)

Ф. МЕСАРОШ (Будапешт), Ф. ТЕНОРА (Брно), В. ВАРУШ (Брно) и Р. ВИГЕР (Осло)

Авторами было проведено электронномикроскопическое скеннирование головки и поверхности тела трех видов рода *Syphacia*: *S. agraria* SHAPIRO, 1973, *S. vandenbrueli* BERNARD, 1961, и *S. montana* YAMAGUTI, 1943. Наблюдаемые морфологические признаки были сопоставлены с подобными признаками близких к исследованным видам других видов рода *Syphacia*.

#### РЕВИЗИЯ РОДА PRIESNERIUS GEN. N. И ПРИМЕЧАНИЯ К РОДУ BIFIDOCEROPALES PRIESNER (HYMENOPTERA: CEROPALIDAE)

Л. МОЛНАР (Сегед)

Автор рассматривает подроды *Bifidoceropales* и *Aceropales*, описание Приснером, как самостоятельные роды, и вместо номенклатурно недействительного названия *Aceropales* внедряет название *Priesnerius*. по отношению к виду *Ceropales unicolor* GUSSAKOVSKIJ в работе устанавливается, что это синоним вида. *B. pygmaeus* (KOHLE). Определяются лектотипы видов: *Ceropales unicolor* Guss., *Priesnerius deserticola* (PRIESNER), *P. polychloros* (Guss.), *P. tihensis* (PRIESNER), *P. honorei* (PRIESNER), *P. bogdanovi* (RAD.), *P. sabulosus* (F. MORAWITZ). Дается описание нового вида *Priesnerius tobiasi* sp. n. и сообщается ключ для идентификации всех известных до сих пор видов *Priesnerius*.

#### НОВЫЕ ВИДЫ РОДА OPIUS WESM. ИЗ ВЕНГРИИ (HYMENOPTERA: BRACONIDAE, OPIINAE)

Й. ПАПП (Будапешт)

В работе публикуется описание трех новых видов *Opius* WESMAEL, обнаруженных в Венгрии, сообщая их *differentia specifica*, которая дополняется 13 рисунками. Новые виды: *Opius* (*Utetes*) *brutus* sp. n. ♀, *O.* (*Utetes*) *melbus* sp. n. ♀, *O.* (*Misophthora*) *discolor* sp. n. ♀.

#### SPHAEROCERIDAE (DIPTERA) В КОЛЛЕКЦИИ БУДАПЕШТСКОГО МУЗЕЯ ЕСТЕСТВОЗНАНИЯ. IV. SPHAEROCERINAE

Л. ПАПП (Будапешт)

В введении к статье подытоживаются морфологические признаки имаго подсемейства. Затем дается описание нового рода (*Trichosphaerocera* gen. n.), нового порода, (*Taigetomyia* subg. n.) и 18 новых видов, собранных в различных частях мира (Аргентина, Боливия, Чили, Коста-Рика, Гана, Конго, Эфиопия, Камчатка). В богатой коллекции Будапештского Музея Естествознания автор обнаружил дальнейших 17 видов, и сообщает многочисленные новые данные их местонахождения.

## ПОТРЕБНОСТЬ В ПИЩИ НЕКОТОРЫХ ВИДОВ DIPLOPODA И ISOPODA В МЕЗОФИЛЬНЫХ ЛИСТВЕННЫХ ЛЕСАХ ВЕНГРИИ

М. ПОБОЗНИ (Будапешт)

Автор исследовал в двух грабово-дубовых лесонасаждениях роль видов *Diplopoda* [*Leptoiulus proximus* НЕМЕС, *Chromatoulus projectus* ВЕРН., *Cylindroiulus luridus* (С. Л. КОСН), *Unciger foetidus* (С. Л. КОСН)] с наибольшим числом особей, а также доминантного вида *Isopoda* [*Protracheoniscus amoenus* (С. Л. КОСН)] в разложении лесной подстилки, лежащей ранней осенью на почве. Он определяет их предпочтительно потребляемую пищу, и количество потребляемой ими пищи.

## ВИДЫ TETHINIDAE ИЗ МОНГОЛИИ И СПИСОК ПАЛЕАРКТИЧЕСКИХ ВИДОВ (DIPTERA: ACALPTRATAE)

А. ШООШ (Будапешт)

Из материала *Tethinidae* собранных в ходе шести научных экспедиций в Монголии, в работе д-ра З. Касаб (1963—1968 гг.), сообщается описание 5 видов (90 экземпляров), среди которых 2 вида (*Pelomyiella mongolica* sp. n., *P. nigra* sp. n.) оказались новыми для науки. Автор сообщает ключ для идентификации палеарктических видов рода *Pelomyiella*, а также список палеарктических видов *Tethinidae*.

## ВИДЫ ANOPLOCEPHALIDAE, (CESTODA) ПАРАЗИТИРУЮЩИЕ НА ЕВРОПЕЙСКИХ ГРЫЗУНАХ LEPORIDAE И SCIURIDAE

Ф. ТЕНОРА (Брно) и Е. МУРАИ (Будапешт)

Авторы проводили морфологическое исследование видов *Anoplocephalidae*, собранных на различных породах зайцев и сурков, живущих в Венгрии, Чехословакии и Швейцарии. Дается подробное описание видов *Andrya rhopaloccephala* (РНИЕМ, 1881), *Mosgovoyia pectinata* (ГОЕЗЕ, 1782), *Neoctenotaenia ctenoides* (РАЙЛИЕТ, 1890), *Ctenotaenia marmotae* (FRÖLICH, 1802). Авторы выяснили систематическое место видов, относящихся к родам *Ctenotaenia* РАЙЛИЕТ, 1893 emend., и *Neoctenotaenia* ТЕНОРА, 1976, emend., и дают ключ для определения видов *Anoplocephalidae*, паразитирующих на европейских грызунах *Sciuridae* и *Leporidae*.

## ИССЛЕДОВАНИЕ ГРУППЫ "EUPITHECIA SCALPATA-SYRIACATA" (LEPIDOPTERA: GEOMETRIDAE)

А. М. БОЙНИЧ (Будапешт)

В начале работы дается описание новых видов: *Eupithecia saueri* sp. n. (Армения, Дагестан, Анатолия), *E. eberti* sp. n. (Иран), *E. falkneri* sp. n. (Алжир). В ходе работы по ревизии видов автор получил, отчасти на основе типовых экземпляров, следующие результаты: *E. separata subpulchrata* ALPH. stat. et comb. n.; *E. separata conviva* DIETZE, stat. et comb. n.; *E. gluptata* DIETZE, stat. n. Кроме того сообщаются до сих пор неизвестные рисунки обоих полов *E. syriacata* STGR., и женского типового экземпляра *E. gluptata* DIETZE.

## РЕВИЗИЯ ВИДА DENDROBAENA PLATYURA FITZINGER, 1833 (OLIGOCHAETA: LUMBRICIDAE)

А. ЗИЧИ (Будапешт)

При ревизии вида *Dendrobaena platyura* (FITZINGER, 1833) автор установил, что у основной формы, а также у двух подвидов этого таксона, мужская половая щель расположена не на 15-ом сегменте, как это характерно для этого семейства, а вместо сегмента



она находится на кольце. Ввиду того, что при копуляции место мужской половой щели имеет большое функциональное значение, автор, на основе этого отклоняющегося признака, выдвигает новый род, под названием **Fitzingeria** gen. n., типовым видом которого является *Fitzingeria platyura platyura* FITZINGER, 1833.

ДВА НОВЫХ ВИДА НАСТОЯЩИХ ПИЛИЛЬЩИКОВ ИЗ АРМЕНИИ  
(HYMENOPTERA: SYMPHYTA)

Л. ЗОМБОРИ (Будапешт)

В ходе научной командировки в Армении, автор исследовал коллекцию настоящих пилильщиков, храняемых в Ереванском Зоологическом Институте Академии Наук Армянской ССР. Он обнаружил два новых вида: **Arge daduriani** sp. n. **Athalia armenica** sp. n. и сообщает их подробное описание, указывая также на родственные связи новых видов.

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